The Builder.

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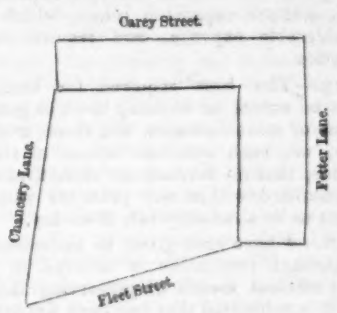
JOKING journalists, jovially jesting, with reference to the Sixth Report of the Metropolitan Improvement Commissioners, just published, which makes the erection of a suitable Record Office a *little* more probable than it was before, have pointed out that it was on the 2nd of November, 1647, that the idea of erecting a general repository for the public records was first enunciated; and that it would be a coincidence "pretty to observe" if the question were finally settled just two centuries afterwards, which, aforesaid journalists think, would be a very fair allowance of time for official deliberation.

A very fair allowance indeed, considering, too, that all that time our national archives, of which we make so much use and pretend to be so proud, have been running risks to which no ordinarily careful tradesman would think, for five minutes, of exposing his vellum'd records of Mrs. Screwemtight's consumption of his fresh butter, or Mr. Jones's order of grindstones and rolling-pins. We have, indeed, a singular way of taking care of what we prize,—"an open shed in the Essex marshes," says another diurnal writer, "the Hertford powder-mills, the magazine at the Tower, one moiety of a building the other half of which is devoted to the fabrication of fireworks or gun-cotton,—these are the chosen spots in which Englishmen deposit the printed or written wisdom of their forefathers, which in the abstract they are constantly bespattering with praise. If the records, like human beings, were open to infectious disease, they would be summarily despatched, for security's sake, to Burying-ground-passage, Johnson's-place, Gee's-court, or some of those favoured localities in which Government are determined to receive the cholera, if it shall unfortunately visit the metropolis, with suitable honours. As this cannot be, we have selected the two next most suitable agents of destruction in order to get rid of our records with as little delay as possible,—gunpowder and mildew. In the Tower, one portion of these luckless documents is submitted to the former, in the Queen's Mews to the latter, agency. We may regret that the second chemical process is slow, but it has this superiority over the means of destruction employed at the Tower,—that it is sure. On the other hand, although we may often have occasion to reflect with pain on the immunity from damp enjoyed by the Rolls in the Tower, there is the counter-balancing consideration, that at any given hour of the day or night the whole collection may be launched into eternity by an explosion of the magazine."

Alas, for the veracity of our future histories, if such were the case, the questioning of titles, and the want of materials for coming antiquaries to rummage! And yet, though a period of two hundred years is a fair allowance for deliberation (about a sixth of the whole time that has elapsed since we left our skins and took to living like Christians), the thing is not done, it is merely made possible.

The report relates to two matters,—a site for the proposed Record Office (the size and plan of it incidentally) and the formation of a new grand line of communication between the eastern and western divisions of the metropolis. Mr. Pennethorne, Mr. R. L. Jones, and Mr. Henry Cole, are the witnesses whose evidence is given, and four plans are appended, namely:—No. 1. Plan of the Rolls Estate and other properties in the neighbourhood, showing how they will be affected by the erection of the proposed Public Record Office, and by public improvements; No. 2. Plan showing a main central thoroughfare from the eastern to the western quarters of London, suggested in connection with the proposed new Record Office on the Rolls Estate; No. 3. Plan showing the proposed arrangement of the ground floor of the new Record Office; and No. 4. Plan showing the proposed arrangement of the first floor of the new Record Office.

The site pointed out for the office would be bounded on the west by Chancery-lane, widened; on the north by an extension of Carey-street, 60 feet wide, made part of the new thoroughfare; on the east by Fetter-lane, moved easterly, and made 60 feet wide; and on the south by Fleet-street.



The plan of the building as proposed takes the shape of a reversed L, the horizontal arm being next Carey-street: St. Dunstan's Church, Clifford's Inn, and Sergeant's Inn, occupy the remainder of the ground circumscribed by the roads named.

The building is to be Elizabethan (we hear it with misgivings), built of brick, with a long series of bay windows, and to cost 175,000*l.*, exclusive of fixtures and fittings, which would be 31,500*l.* more. It would be two stories in height, and contain 141 rooms, besides a basement which might be afterwards appropriated. Provision would be made, too, for adding a third story when required. There would be fire-places in every room, and *no wood-work* throughout the building. The cost of properties for the site, beyond those in possession, and after taking credit for various matters, is estimated at 109,107*l.*, and the net cost to the public, of extending Carey-street across Chancery-lane and the Rolls Estate to Fetter-lane, and of diverting and widening Fetter-lane from such proposed extension of Carey-street to Fleet-street, 112,908*l.*

The new main line of communication now proposed by Mr. Pennethorne, proceeds eastward from Long-acre, at the corner of Bow-street, diverges towards the south into Carey-street, Lincoln's-inn, thus forming an ugly and awkward angle with Long-acre, traverses the north side of the Rolls Estate into Fetter-lane, and proceeds thence by a bridge over Farringdon-street; passes by the Sessions House, Old Bailey, between that and Newgate prison, takes down part of Paternoster-row, and so comes out at the west end of Cheapside.

The line suggested by Mr. Pennethorne in 1834 (no one can say this has been hurried, although denied the *mature* reflection of two centuries given to the record office), proceeding from nearly the same point in Long Acre, kept north of his present line, and would have passed along the south side of Lincoln's-Inn-fields, and through New-square, close to the end of the new hall; then crossing Chancery-lane, and the north end of Farringdon-street, would have terminated at the west end of Newgate-street. The benchers of the "Inn," however, and the trustees of the "Fields," threatened opposition, and the line has been kept to the south to avoid the forbidden ground.

By making this deviation, the office-of-works surveyor has fallen into a line proposed by the city surveyor, Mr. Bunning, who has complained in a letter to the *Times* of the treatment he has received, both from Mr. Pennethorne and the Metropolitan Improvement Commissioners themselves. In this communication he very justly objects to *crooked* lines, and points to the sinuosities of Gresham-street, in support of his protest.*

He might have mentioned Endell-street, too, at the end of Bow-street, the point of commencement for the new line, where (although the houses at the corner, which prevented the road from Bow-street continuing straight on, actually fell down), an awkward turn was positively created, and a coachmaker's manufactory, an imposing pile of the sort, by the way, is now rising to shut out all hopes of a remedy for years to come.

The line in the main, however, must be generally approved of; and the commissioners conclude their report by saying, they are of opinion, that "*if* measures be adopted by the Government for the erection of" a record office, such portion of the proposed line as is included in the estimate we have given, should at the same time be executed: and they think it their duty to add, that the general line of communication proposed "is (irrespectively of the special advantage of erecting an office for the records of the kingdom on the site suggested) the most eligible and practicable line for connecting the eastern and western portions of the metropolis, and that it would very advantageously increase the facilites of communication within the same."

We should say, that the plan shews a new street, branching from the Strand at the eastern corner of Brydges-street, in a north-easterly direction till it meets the new line, and another from the north side of St. Clement's Church. Opposite to the first there is also a proposed street subtending to Holborn, partly formed by the western roadway of Lincoln's-Inn-fields, and Gate-street, widened. At the corner of Fetter-lane, in Holborn, there is a street in a south-easterly direction, meeting the new main line near Shoe-lane, and a corresponding street from the corner of the new

* Mr. Bunning had been named by the paper in question, as a concurring party; and he therefore wrote,—"I beg to state for myself, that I know nothing of the proceedings, and would be glad to learn through you why my evidence, as the officer of the corporation, who is expected to carry out a considerable portion of the street, was not required before the commissioners.

The plan which I laid down westward was all but unanimously approved of by the improvement committee. It differs from that of Mr. Pennethorne in that it is comparatively a straight line, and in all my reports to the committee I urge most strongly the necessity of avoiding all crooked ways, the disadvantage of which, happily for my recommendations, manifests itself but too plainly in the 'sinuosities' of Gresham-street; and, in reference to this street, I may be allowed to state that when the improvements were talked of, long before I anticipated filling the honourable office I now hold, I waited (as the architect of the Haberdashers' Company) in conjunction with the master, Mr. Liddiard, on Mr. Richard Jones, and suggested improvements in connection with the haberdashers' property in that locality, which were uncourteously rejected, but which I cannot help thinking would in a great degree have saved the odium which you, in common with those who use the street, justly cast upon it.

To go back to the 'new line of street,' I have just reason to complain of the way in which I have been treated, and Mr. Pennethorne is not free from blame; his original plan differed materially from mine, bearing obliquely north-eastward, and terminating at the west end of Newgate-street, whilst my line passed direct from Carey-street with a viaduct over Farringdon-street, through the vacant space between the Sessions House and Newgate gaol, and terminating at the west end of Cheapside.

Mr. Pennethorne, however, has adopted a portion of my line, distorted the remainder, and published the whole at the end of May last as his work, dating it back January 23, 1847, whilst I can assert that on the 26th of April, 1847, his plan took the direction above described.

Thus it will be seen that I, in behalf of the committee, who are all but unanimous as to the advantage of a straight line, am not a concurring party, as has been stated, to the projected street."

Fetter-lane, in Fleet-street, joining the main line at the same point. These, however, as well as the main road, from Fetter-lane, the city boundary, will, of course, have to be decided on and carried out by the corporation.

The Appendix contains a communication from Mr. Braidwood on the means of preserving the records from fire, which will apply in other cases, and may be usefully recorded here.

"In the first place, I have assumed that a Record Office must be so built that no fire in any one compartment can by possibility affect another; also, that the safety of the building, as a whole, against fire, must not depend on the care and attention of any one, or on any outward appliances.

I am not aware of any incombustible material which can be used for the support of floors, so as to allow a tolerable size of apartment, with sufficient light, except iron.

Iron, however, must be used with the greatest caution, as, of all building materials, it is one of the most rapidly and most seriously affected by fire. Mr. Fairbairn, engineer of Manchester, in his interesting experiments on the strength of cast-iron, published in the Seventh Report of the British Association, page 409, states that, on raising the temperature of cold blast cast-iron from 26 to 190 degrees Fahrenheit, the loss of strength was 15 per cent; and, in raising the temperature of hot blast from 21 to 190, the loss of strength was 10 per cent.; taking the average of the above-mentioned examples, it gives a loss of 12 and a half per cent. of strength, on a rise of temperature of 166 degrees.

The fusing-point of cast-iron is differently stated in different works, but it may be safely taken as not less than 3000 degrees Fahrenheit: therefore, according to the above experiments, less than one-half the heat required to melt cast-iron, would completely destroy its strength. I have now by me two specimens of cast-iron, which have been melted at fires which took place this year (22nd of February and 10th of September); and some time ago I sent to the Official Referees some pieces of cast-iron, and *wrought* iron melted also at a fire (7th of September, 1844).

As iron pillars are much more exposed to the action of the draft, and, in consequence, the intensity of the heat, I did not think it advisable to recommend them. Iron ties are still more easily affected by the heat, as a comparatively slight rise of temperature will so expand them, as to prevent them acting as ties,—in fact, make them totally useless, or rather worse, as what power they might exert would, in consequence of the expansion, be the reverse of ties.

Iron girders, if of considerable length, are apt to unsettle the brick-work by their expansion, if heated to any extent.

Again, it is a very common thing to have the mortar in the first course of bricks completely pulverized by the heat; in one instance, a great part of the first or lowest layer of bricks in an arch fell down of themselves (15th of July, 1843); therefore the brick arches in the proposed building ought not to be less than nine inches thick.

It is now a generally admitted principle by all who have turned their attention to the subject, that, as the cubic contents of any building or compartment of a building (if properly divided) increase, so does the intensity of the heat increase, and, of course, the loss of strength in the iron would increase in the same proportion. It must also be considered that, although a Record Office may be constructed without any combustible materials in the building itself, still, even in the size of the apartment proposed, say 27 × 17 × 15, there would be at least twelve tons of Records in many of the rooms of the above size, disposed so as to have a thorough draft round them in every direction for the purpose of preservation; but, at the same time, this thorough draft would cause the ignition to proceed with greater rapidity, and very much increase the intensity of the heat.

For these reasons, I proposed that the bearing of the girders should not exceed seventeen feet; to this extent they might be made, I have no doubt, perfectly secure, if protected from the effects of the heat, as they may easily be to a certain extent, and also, that each compartment should not exceed 27 × 17 × 15 = 6885, the height being intended to give two sets of shelving.

This appears to me the largest size of room that could be used with perfect safety. I would even advise the room to be divided into two, with iron window shutters, for the more precious description of Records.

One very great advantage, from the small size of the rooms, would be that, should a fire take place, the loss would be in proportion to the size of the room.

I may here state, that what are commonly called fire-proof buildings (cast-iron girders and brick arches) are not so, if the compartments are large, and a sufficient quantity of combustible materials to raise the iron to a certain temperature be introduced."

"Respecting the mode of heating the building, I strongly recommend open fire-places (two in each room) for safety.

There are many objections to heating by hot air or hot water:—

1st.—A considerable number of fires have been caused by both modes.

2nd.—Either mode induces a general communication through the building, not only by means of the pipes, but it is next to impossible to pass a pipe which is alternately heated and cooled through brick or stone-work air-tight, owing to the contraction and expansion of iron, without expansion joints, which are a considerable expense, and require constant attention.

3rd.—The heat required for heating so great an extent of building must be generated in one or more furnaces, and these, with their flues, are such constant causes of risk and trouble, that no furnace or close fires should be permitted within any premises which are meant to be absolutely safe from fire.

4th.—I have been given to understand that a thorough ventilation is believed to be the most efficient means of preserving Records; and it is submitted that two open fire-places in each room, with independent flues, would better effect that end than either hot air or hot water. These fires could be lighted at pleasure in any one or more rooms that might most require drying or draft; at present, I am not aware that heating is at all necessary for the preservation of Records, except under peculiar circumstances, when the fires could be lighted."

The newspapers of Wednesday last would lead to the impression, that the feeling in favour of improvements is strong and widely spread, the "Court Circular" of that day chronicling little else than deputations with that end in view. A deputation from the city of London had yesterday an interview with the Commissioners of Woods and Forests: a deputation from St. George the Martyr, Southwark, had an interview yesterday with the Commissioners, on the necessity of taking immediate steps for the commencement of forming a new street through the unhealthy and depraved district, the Mint: the Quadrant Improvement Association came up to the Commissioners yesterday; the Metropolitan Sanatory Commission held a meeting, yesterday, &c., &c., &c.; but if we look to the miserable aspect of the intended extension of Farringdon-street to Clerkenwell, and remember that that abominable nuisance, Middle-row, is even now in course of re-construction, we must doubt the genuineness of the feeling, and look for better times.

A Flying Bridge given way with a Crowd.—The Austrian Archduke Stephen, in journeying from Koman to Raab, had just passed a flying bridge across the Danube, followed by a crowd of people, when the bridge or a balustrade gave way, and precipitated an immense number of persons, with two carriages in the Archduke's suite, into the river, where a number of persons—accounts varying from nine to forty-six—were drowned.

PROGRESS OF BUILDING IN PARIS.*

The effect of railways in changing the centres of activity, and creating new towns by the side of the old ones, or upon spots where populations could not possibly have been congregated before, is very remarkable. It has become so evident here, that it could not fail to draw attention; and the municipal authorities, at length awakened to the importance of the subject, and the danger menacing them, are seriously considering what remedy they can apply to the evil, how to save their revenues, or profit by the change. A railway terminus acts like a loadstone; it attracts towards itself in a moment a whole population. Streets branch out in every direction, forming so many rays, of which the station is the focus and centre of animation; extend themselves to the old quarters and districts, which far removed from the heart of towns, seemed almost deprived of life, inspiring them with renewed vigour, and at the same time giving an aspect of cleanliness and beauty for which they are alike indebted to paint and spirit.

It is not merely in increased bustle and activity that these new creations of industry are remarkable; there is a general character of improvement, both in the laying out of the streets, in the building of the houses, and in the adoption of a system of sewerage and drainage, much wanted in the older parts of the French metropolis. In these respects the improvements are decidedly great; and hence there is a double motive for the preference which the public gives to the new localities, and an encouragement to the architect and builder to erect such edifices as may be striking in point of taste and novelty of design and ornament, as also for their interior arrangements, commodiousness, and salubrity.

It cannot be said, that the modern productions in architecture and construction are not a significant evidence of increased skill in building as an art, and attention to those points so important to the comfort and health of the inhabitants; although perhaps objections may be raised as to the taste displayed in a few edifices, the capriciousness of the style, or the luxuriance of the decoration. On these matters every one will have his little saying,—may prefer plainness to richness, simplicity to profusion, whitewash to gilding or colouring. But if we are to have any general improvement, it is quite clear that the field of fancy and imagination must be free as air, for genius to have a chance with mediocrity; and that we must pardon those little extravagancies of ideality or perhaps of mere whim, which we shall find even among the most perfect works of nature itself. These have even their end and object; are not always deficient in beauty, nor ungoverned by rules. It is not then by adhering strictly and severely to the bare principles adopted in the schools, nor by copying servilely the mere masters in art, that new beauties can be created; it is, on the contrary, by the imitation of the conduct of the great masters in escaping from the drudgery of vulgar admiration and vulgar respect for their predecessors, that progress can be made, and that endless variety and newness, which are an evidence of genius, be produced.

Richness of decoration and embellishment in the houses of the middle or upper classes is rarely to be met with, except in times of peace and prosperity. The general occupation of the mind by the stirring events and anxieties of war; the absorption of its energies in the animal struggles for home and country; the calls upon the purse to meet the necessities of Government; and the paralyzing of industry and commercial enterprise, leave neither the will nor desire for embellishment, nor give the opportunity and freedom to many to cultivate the taste and talents they may naturally possess. A few only of the very rich here and there, or the favourites of fortune in the exuberance of their happiness, will surround themselves with the generally forbidden luxuries, and force into productiveness the unpropitious field of art. Splendid monuments may rise, as if by enchantment, at the conqueror's command,—massive, magnificent, complete in all their parts, perfect as to the rules of art, and yet be after all but copies of copies, imitations of former conceptions, without any thing new or striking in them. Domestic architecture will, however, lie dormant, comparatively speaking, and be of so

* See p. 431 ante.

plain and unideal a character, that the niggardly necessity of the times will be better demonstrated by this evidence of the want of encouragement, than by any other argument.

Within not many years, Parisian architects seem rivalling each other in the splendour of the houses and hotels they have constructed at the bidding of private enterprise. Whole quarters have arisen, not *en masse*, as with us, but house after house, — each proprietor, anxious to make the most of his bit of land, and give as much of variety, singularity, or richness of ornament as possible to his hôtel. The interior corresponds with the exterior in the getting up. Painting and gilding extend from the very *porte-cochère* to the sixth story, covering, frequently, both walls and ceilings, and proving that the art of interior decoration is keeping pace with exterior ornamentation.

This luxury of modern buildings has been railed against by some as excessive, and indicative of approaching corruption and degeneracy in a people who give encouragement to it. The accusation, however, is preposterous, and as totally different from the facts, as applicable to the present time, as it can be. The luxury of the past was rather the luxury of a few, who, monopolizing the wealth and resources of the community, squandered it in excesses of every kind; and, though encouraging art and artists to a certain extent, were, by the unproductiveness of their extravagance and the wasting of the fruits of labour, bringing about that degeneracy of which their luxury was a forerunner. The luxury of the present, on the contrary, is the luxury of a greater mass, who, having a fairer share in the productions of industry, and having obtained security for the enjoyment and employment of their acquired wealth, lay it out ever productively, and give encouragement at the same time to art and artists. This luxury, then, is not an offspring of vice, but a necessary result of a more general prosperity, coupled with an increased taste for the beautiful, and an ardent desire for improvement.

While we admire many of the fine old aristocratic hotels with which this city abounds—while we admit that they have noble looking entrances, spacious courtyards, splendid and roomy apartments, we must, however, confess that few present much of architectural beauty or ornament worthy of notice. They have lofty doors and lofty windows which give a certain air of grandeur, but the plain plastered exterior of the majority, renovated occasionally with a coating of whitewash, can bear no comparison with the richly-ornamented exteriors of modern dwellings. Nor can the amount of encouragement given by their owners, lavished perhaps by almost a whole class, upon a few pet artists, be compared with the advantages to art in general and artists which arise from the prosperity of an intelligent and cultivated middle class.

These ancient mansions of the nobility of France have two things which speak in their favour, and strike the observer at first sight,—space exteriorly; and room and height interiorly. In these respects, modern hotels are at a disadvantage; the value of land has increased so immensely, that the most must be made of it, and consequently floor is reared above floor, and the courts narrowed to the smallest possible space, consistent with the wants of the "locataires." Elegance, yes, and comfort, richness and convenience, may be found united in these modern houses, as much, if not more, than in those of any other nation. The most splendid furniture, the richest carpets, hangings of silk and satin, or velvet—in short, every thing that can tend to comfort, gratify the imagination or the taste, in bronze, candelabras, clocks, &c., are to be found in the truly French apartment. But as there are perhaps six stories to the hotel, and every proprietor is desirous of having as many families as possible around his court, and these respectable and payable, modern rooms are for the most part extremely limited both as to size and height. Great fortunes having disappeared, the stately first floor of former days is nowhere to be seen in the new quarters. The smaller fortunes then were satisfied with the second or the *rez-de chaussée* —now however, the greater equality of circumstances demands a corresponding equality of habitation; and hence three, four, and even five floors in some houses have scarcely a difference of height or internal commodiousness between them.

These changes in the disposition of houses are extremely interesting, as characteristic of a corresponding change in the circumstances of a people. On this account we take note of them, and think it well worth while to draw some comparison between them, to shew the corresponding advantage to architectural development, which the improved fortunes and taste of the middle class, have called forth.

If we cannot so often look for the splendid residences of former times on which to engage the talents of a few great artists, we have, in compensation, a great many more of a different class to employ a greater number, and demanding a not inconsiderable share of talent. Take any one almost of the modern hotels, and place it side by side with one of the stately palaces of the Faubourg St. Germain: it will eclipse it altogether in splendour—the eye will wander from the dull and spacious building to fix itself in admiration on the elaborate workmanship displayed in the rich and varied ornaments of the modern building. Enter the porte-cochère, it is quite as lofty and infinitely more rich than the other; ascend the staircase, and you find marble and mahogany, and painting and gilding, in as great, if not greater profusion; the difference is, that the one is a private, the other a public staircase.

The number of ancient hotels really deserving of attention, in an architectural point of view, is really very limited; when we have named the palace of the Condés, of the Contis, the Hotel d'Osmond, that of the De la Rochefoucaults, and a few others in the Rue de Varenne, Rue de Lille, and adjacent streets, we have said enough—the majority are more curious than beautiful, more spacious than elegant. Turn from these to the splendid house built by M. Cremieux, in the avenue of the Champs Elysées; to the Maison Dorée, as it has been styled on the Boulevard, at the end of the Rue Lafitte; to the new streets in the vicinity of the Rouen railway station; to the splendid buildings along various portions of the Boulevards—,the Place St. George,—the quartier Notre Dame de Lorette; and to hundreds of others equally worthy of examination—and it must be confessed that there is a beauty and variety of design, and an amount of artistic skill, bestowed on their embellishment, which can find no equal in former times.

A few hotels on a grand scale have been constructed latterly, but few they are; for there is a vast difference between building a splendid house to live in oneself, and building one which is to make an abundant return for the money laid out upon it. We might notice the hotel lately finished near the *rond-point* in the Champ-Elysées, and now inhabited by Madame Le Hon, whose husband was formerly ambassador from Belgium to the Tuileries. Nothing can exceed the magnificence of the interior, or the richness of the decoration and furnishing: we question whether its equal can be found in Paris. Higher up, on the same side, is an elegant building, recently finished, built, we think, by the Duke de Lauriston, or a member of his family. It is almost too quiet-looking, and wants something to relieve it. In the Cours la Reine are two beautiful hotels in course of termination; one has been sold, and the other is announced for sale, the proprietors not having calculated well their expenses. A gentleman named Tourette is the constructor of one of them: there is much of taste and novelty displayed in it. The house consists of a centre and two wings, each of which is ornamented with four Corinthian columns: it has a window between each pair of columns, and the entablatures are surmounted with groups representing the seasons. There are but two figures in each group, a female and child, but their positions are well varied, and there is much to praise in the distribution of the accessories: they are from the attelier of a sculptor of considerable note. Within a few steps is the well known house, called that of "François Ier.," which was brought from Moret by Colonel Brack, and reconstructed, stone by stone, on its present site, at the Restoration. This house has given the name to the quarter. A large private hotel, having much of the style and loftiness of the old mansions, is terminating in the Rue Marbœuf: it is too good for the situation. Another, the façade of which is of great simplicity and elegance, is nearly finished, in the Avenue d'Antin. From the extent of the building at the back, it is evidently intended for the habitation of several families.

We have thus far entered into a consideration of the encouragement given to architecture and exterior embellishment in the great majority of constructions rising in the best quarters of the town, because the present may be regarded as a new epoch in ornamental building, interesting to all lovers of art, as well as pleasing, and indicative of the great diffusion of wealth and the spirit and taste of the educated classes. If we look to the character of the buildings destined for the habitations of the lower classes, we find them necessarily plainer in style and cheaper in construction. For the beautiful freestone found in various parts of the neighbourhood, and which adds so much to the strength and superiority of the better class of houses, an inferior and softer stone is used in running up the walls, coated with plaster to imitate stone. It averages about 60 francs a load. The back part of these dwellings are lightly built of little more than mere lath and plaster; and but for the interference of the authorities, speculation would have prompted to the erection of houses of a very unstable description.

The greatest mass of buildings, as we have already remarked, is going on in the neighbourhood of railway stations. There seems to be a rage for that of the St. Germain and Versailles line in particular. This has been the one longest established: nearest to the fashionable part of the town, and situated on a gentle declivity, it has, therefore, very naturally attracted towards it that class of inhabitants who had most to gain or enjoy by its vicinity. The establishment of other lines is already producing its effect; time alone is wanting to turn a dreary open waste to one of animation, newness, and prosperity. This is fast accomplishing since the opening of the Northern Railroad, where almost every portion of an immense unprofitable space is now laid out in streets, or walled in.

ARRANGEMENT OF BUILDINGS ON PRINCIPLE OF CENTRAL INSPECTION.

THE LATE SIR SAMUEL BENTHAM.

The mode of constructing buildings so as to afford a central point of observation, from which the head of the establishment may inspect, without the necessity of moving, all the essential branches of service, having been adopted by the late Penitentiary Congress, it may be of use to architects and others concerned in the erection of buildings other than, as well as, prisons, to call attention to the great variety of structures to which the same *principle* of *central inspection* is applicable.

When the late Brigadier-general Sir Samuel Bentham was, in the year 1787, with his regiment at Cricheff, in White Russia, he, as a friend of Prince Potemkin's, undertook the management of his fabrics in that neighbourhood. Struck with the drawbacks to success by the miserable arrangement of the manufacturing buildings there, he was led to consider what form would be most suitable for an edifice as an extensive manufactory, and concluded that a central point of observation, from which the director of works could with facility inspect the whole of the persons employed, and the operations going on, would materially contribute to good order, to perfection of the works, and to economy. Pursuing the idea, he contrived a structure having a central chamber for offices, with rays diverging from it for workshops. The rays were of two stories, the central observatory but of one floor, but that of such a height, that being upon it, the inspector had full view over two floors of the rays, the floor of the lower workshop being *below* that of the observatory, the floor of the upper workshop *above* it.

Sir Samuel's elder brother, the late Jeremy Bentham, about this time was on a visit to him at Cricheff, and in a series of letters to a friend in England, described his brother Samuel's invention, giving it the name of "Panopticon, or the Inspection House." These letters were published: the title-page, "Panopticon, or the Inspection House; containing the idea of a *new principle of construction*, applicable to any sort of establishment in which persons of any description are to be kept under *inspection;* and in particular to penitentiary houses, prisons, houses of industry,

workhouses, poor-houses, manufactories, mad-houses, hospitals, schools."*

In the fifth letter, Mr. Bentham desired it to be clearly understood, that "the essence of it (the invention) consists in the *centrality* of the inspector's situation, combined with the well known and most effectual contrivance for *seeing without being seen*." He mentions the collateral advantage of *frugality* consequent on this plan as to inspectors, a single person being competent to the supervision from a central point, of a greater multitude than were ever yet collected in one building. Another very important advantage of the plan, he states to be, that "the under-keepers, or inspectors, the servants and subordinates of every kind, will be under the same irresistible control with respect to the head keeper or inspector as the prisoners, or other persons to be governed. It presents an answer, and that a satisfactory one, to one of the most puzzling of political questions, *quis custodiet, ipsos custode*."

In manufactories, he speaks of the central observatory as suitable for the compting-house. His appropriate observations in regard to schools, admit not well of abridgment. One paragraph, however, it may be worth quoting, as indicating the origin of Sir Samuel's invention. Jeremy Bentham says, "In the Royal Military School at Paris, the bed-chambers (if my brother's memory does not deceive him), form two ranges on the two sides of a long room; the inhabitants being separated from one another by partitions, but exposed alike to the view of a master at his walks, by a kind of *grated window* in each door. This plan of construction struck him, he tells me, a good deal, as he walked over that establishment (about a dozen years ago was it not?) with you; and possibly in that walk the foundation was laid for his Inspection House. If he there borrowed his idea, I hope he has not repaid it without interest. You will confess some difference, in point of facility, between a state of incessant walking, and a state of rest; and in point of completeness of inspection, between visiting two or three hundred persons one after another, and seeing them at once."

In the year 1790 the amelioration of prisons and penitentiaries being a subject of public interest, Jeremy Bentham had opportunity of discussing his brother's invention with many influential persons. Sir Samuel, coming soon afterwards to England, had complete models made on his principle of a prison for a thousand persons, in which, as the rays consisted of several floors, the upper ones were appropriated to services requiring the less constant inspection, but were subject to it at all times by means of a counterpoise apparatus affixed to the platform on which was the inspector's chair, so that at pleasure he could raise himself to any required height. Members of Government were highly satisfied with the Panopticon principle itself, with the adaptation of it to the purposes of a penitentiary prison, as exhibited in the model, as well as with Jeremy Bentham's views in regard to the placing the whole, as by contract, in the hands of a private individual, subject to all the checks, and to all the publicity which he had laid down as essential security for the fulfilment of the trust reposed; they consequently authorized Mr. Bentham to make preparations for the erection of such a structure. Sir Samuel contrived the whole with its details so as to be *fireproof*, introducing iron, cast and wrought, in lieu of wood. The site fixed on by Government was Putney Heath, but the thought of having a prison in their neighbourhood was revolting to many who had villas in the vicinity, which caused that place to be given up. Millbank was offered to Mr. Bentham in lieu, but the unhealthiness of the locality rendered him averse to its acceptance; hesitation on both sides led to the abandonment of the project altogether. Great part of the castings had been provided, which, with outlay for machinery of Sir Samuel's invention, contrived for the use of prisoners, had amounted to an expenditure of upwards of 20,000*l*.

Early in 1797, the Admiralty having desired Sir Samuel's opinion (he being then Inspector General of Naval Works) whether the requisite security for 11,000 prisoners of war might not be more economically provided for than by a plan their lordships referred to him, and for which a number of wooden prison-houses were already framed in London, he devised the glazing of one end of these houses, and arranging them radially, pointing to a centre, each prison-house having its airing-ground before it towards the centre. For the guarding these prisons, he devised the construction of a central observatory, wherein the whole of the military requisite would be lodged, so that their force would be concentrated in case of any outbreak amongst the prisoners, and by placing there a small swivel-gun or two, perfect command was obtained over the prison houses. Thus whilst all the prisons were constantly under observance sufficient for security, the prisoners themselves were freed from the annoyance of guards mixing with them. By this Panopticon arrangement, out of the 1,500 officers and men that had been destined as a guard, even as many as a thousand might well have been spared for other services. It proved, however, that sufficient accommodation for prisoners was found elsewhere.

With the knowledge of the British Government, Sir Samuel, in 1804, presented to the Emperor of Russia the design of a Panopticon as a school of arts, combined with a manufactory for a great variety of articles for the naval service. Shortly afterwards, whilst he was on a mission from this Government to that of St. Petersburgh, the Emperor commanded the erection of such a Panopticon there. Its progress was already sufficiently advanced to afford proof of the perfection of the plan, when, in 1807, war having broken out between the two countries, Sir Samuel was recalled. The building was, however, completed, and brought into use. General Fanshawe, Governor-general of the Crimea, having witnessed its advantages, pointed out the superiority of a building on this principle as *barracks*.

For several years the erection of a naval arsenal in the Isle of Grain, or elsewhere to the north of the Forelands, had been in contemplation; but on the abandonment of this measure, the Admiralty signified their pleasure that Sir Samuel should devise means for the improvement of Sheerness Dockyard. After much thought, and impressed, as he had long been, with the need of suitable accommodations for affording supplies and repairs to our fleets to the eastward, particularly for ships of the line, and finding it would be less costly to form a new dockyard on waste ground and headlands than to repair and augment the old one, he, in January, 1812, presented a design for forming a complete arsenal at that port. Existing sketches shew that it was not till after designing a great variety of arrangements that he fixed on the Panopticon principle on its most extensive scale, namely, a central point of observation, where the offices of the principal officers should be placed; surrounding them immediately with the businesses requiring the most constant inspection; in the next circle placing the repairs of ships; beyond them such works as required a lesser degree of observation from the superiors, but who, by means of appropriate intervals between the rays of the central building, had means of general observation from their offices, especially of the entrance-gate, and of the general landing-place. Then again, in an exterior circle, were arranged buildings such as a naval seminary, store timber houses, made mast-house, &c., which called for but little close inspection. Again, officers' dwelling-houses were designed without the boundary of the dockyard, yet so as to have a view over it. Besides this, the central observatory was raised to such a height as to afford from a terrace on the roof an uninterrupted view over the whole dockyard. By this arrangement, the several branches of business were brought, according to the degree in which they required preference, to the source of orders and instructions, —whilst the superior officers had the least possible extent of ground to pass over, when their immediate presence was required at any particular spot,—a consideration of no small importance in all great manufacturing establishments. The Admiralty, however, determined on a *partial* repair and alteration of the existing dockyard.

ROYAL INSTITUTE OF ARCHITECTS.—The first meeting of the present session will be held on Monday next, the 1st of November.

* These letters are republished in the second volume of Mr. Bowring's edition of Jeremy Bentham's works.

USE OF CONCRETED MASSES.

SIR,—On perusal of THE BUILDER [of the 18th ult., giving copy of evidence of engineers on materials of construction for a harbour of refuge, it appears to me to shew a great want of confidence in using artificial materials, without any other grounds being set forth than want of precedent,—a course of judging that shews we have not the same spirit of invention as the original adopters of the materials in question. An examination of materials proper and most judicious, and of their application, could be made with a greater degree of truth in result, without having any recourse to precedents, which at best only shew we want confidence in our own abilities or judgment, and wish to rely on those who, ages back, with enterprize and knowledge from nature, as it were, claim our admission of their superior skill. They, as original adopters, combiners, or manufacturers of materials, had no precedent, and I think we want none,—we have nature for our guide. We can observe that all hard non-absorbent materials, as flint, granite, metals, &c., are durable in resisting compression and fretting of water; we observe all absorbent materials will not stand the fretting of water, and much less compression; we observe, for cohesive strength, materials of the greatest density are the strongest. Thus pine, less than oak; oak less that metal. In fibre we also find a great variety of drawing tenacity, independent of density. We observe for bearing, cohesive laminated materials of the greatest density are the strongest. By comparison of weight or specific gravity, of absorption, of the action of temperature, moisture, and *local* chemicals, we can ascertain materials most suitable for purposes to which we require their application. By investigation, we discover their formation by nature, and therefrom, ordinary talent, properly directed, is able to form artificial materials: we cannot do better than follow nature as our guide. Observation will inform us that all materials not subject to corrosion are durable, according to their density and non-absorbent qualities. The great natural agents of production, formation, preservation, and the reverse, are moisture and temperature; those agents are within our grasp in formation or combination of what we term artificial materials.

The evidence referred to clearly shews that brickwork in the locality is fretted away by the action of water; that concrete, in much more placid water, is eroded or worn away, and that, in its manufacture, there are no settled quantities of its ingredients. Granite and other natural stone is too expensive.

Brickwork is absorbent, and easy of abrasion or fretting by other substances, and especially water.

Concrete, by wet and dry, for want of density and adhesiveness of its components, erodes away.

As regards quantity of lime necessary to make good concrete, that quantity that will cover every portion with the thinest lamina filling the smallest interstices, is the proper quantity; all limes in setting shrink by the expelling of moisture, and therefore the thinner the lamina the better. Now as quantity of surface differs according to the gauge or mesh of the materials to be covered, so should the quantity of lime be varied; for example, suppose we have 100 perfect cubes 4 inches square each, packed together, and it takes to cover the surfaces in connection one pint of varnish, it will take much more for the same bulk if the cubes are only 2 inches square, and much more than this again if the cubes are only 1 inch square. Now the sand and shingle, composing concrete, frequently differ as much as the 4-inch and 2-inch cubes, and sometimes as much as the 1-inch and the 4-inch, yet few observe by a comparison of difference of surface any necessity for varying the quantity of lime to the extent it is absolutely necessary; but there are proofs that better concrete is at times made of 1-12th lime than in other instances of 1-5th lime.

With respect to the evidence as to the vertical *versus* the sloping or inclined surface against the sea.

Water in motion is a power in some directions almost incalculable; a drop of rain falling, has a power few observe minutely.

The oyster is supposed or is known, to

move or swim by squeesing a wedge of water in the shutting of its shell: now at any crevice however small against which a body of water in violent motion wedges or drives into with a lifting force, the greater the vertical weight above, the better will the action be resisted; while, on a sloping surface to the action of water, there is but a small vertical weight to resist the wedging of water in displacing the stones. In a vertical surface, the retaining pressure is increased greatly from the thickness of two or three stones to the whole vertical height. Again, on a sloping surface, water in motion will cast substances that will fret the surface by rolling over it; whereas in a vertical surface substances can only be cast against it, and if that surface is hard enough to bear the concussion no damage will arise,—the substance of the wall always being equivalent in strength to resist the force of the sea. My observation on the continent, where the sea is rock-bound of granite, shewed me that the vertical rocks are scarcely worn, where sloping strands of the like rock are much fretted away; and where the rocks are of a crevice character, inroads are rapidly made by the sea on sloping shores by its wedging action.

Four years ago, I combined a substance nearly as dense as granite, as durable as flint, and in strength equalling, in some one or other resistance to strains or forces, any of the natural stones, and capable of any *form* and *size*.

I have *girders* of it 16 feet 6 inches long, supported at each end 3½ inches thick, 1 foot 11 inches deep. Paving above 7 feet bearing, from 2½ inches to 3 inches thick, supported only at each end by a bearing of 1½ inch for foot traffic.

I have a retaining wall 81 feet long, 7 feet 6 inches high, without any cross wall or butments; it is of the thickness of nearly three inches. I have some thousand feet of sewage conduits laid, the whole without a flaw or crack. Frost and snow will not crack its surface; water coats it rather than wears it away. It can be made in blocks of from one pound to 100 tons weight, and from one foot to any dimensions of reasonable length; and further, every block can be properly bedded and cemented together water-tight under water, at any reasonable depth: its cost less than stone of the same bulk or strength, and not more than brickwork of equal strength. For expedition, in three weeks after making it is fit for removal, for use as girders and paving.

Its application for sanatory improvements in sewage, and supply of water-conduits, and in making such a perfect system of sewage that should at all times be air-tight, yet receive water, moisture, or sewage at every foot, and from every side, is easy, together with the making of inlets and outlets, into main conduits.—I am, Sir, &c., B. W.

P.S. A 4-feet length of drain, 1 foot diameter, 1½ inches thick, will weigh about 3 cwt., a good proof of its density.

Discovery at St. Saviour's, Southwark.—A small portion of the Norman structure which formerly occupied part of the site of this ill-used church, has been brought to light within these few days past, on the north side of St. John's Chapel, now the vestry-room. It appears to be part of a semicircular apsis, probably of the original church: a string-course is visible, which is ornamented with an "indented" and "billet" moulding. Competent persons are investigating the discovery. The present state of St. Saviour's, once St. Mary Overy, full of interest and a historical landmark, is most discreditable,—to the metropolis in general and Southwark in particular. Mr. G. R. Corner, Mr. G. Gwilt, and other good antiquaries who dwell in the Borough, should look to it.

Russia and Foreign Artizans.—It is stated, that the Russian Minister of the Interior has interdicted the entry into the empire of every foreign workman, unless he can shew that he has been expressly invited by an artizan or manufacturer established in Russia, who has taken the engagement to give him work; and the police authorities have been enjoined not to deliver any permission to reside to foreign workmen, unless a domiciled Russian shall undertake to be responsible for their conduct in every respect.

RESTORATION OF HEREFORD CATHEDRAL.

Last week we referred to a county meeting which had been held, to devise means for raising the funds required to complete the works at Hereford Cathedral.* The Dean, who has exerted himself most devotedly to this restoration, stated very fully the whole progress of the works to the meeting, and it will be useful to record some portions of his address. We should mention, that the total amount of subscriptions is 13,971*l.*, and that the expenditure exceeds this by 872*l.*, still due to the contractor. Moreover, the Dean and Chapter, anxious that the parties now employed should not be dismissed, have made themselves responsible for the continuance of the works, and have entered into a contract for the restoration of the fabric of the choir, amounting to 3,168*l.*, in addition to the 872*l.* already stated to be due to the contractor.

Referring to the dean's speech: when the tower was first discovered to be in danger, the chapter incurred a cost (including the expense of examination) of about 1,100*l.*, by relieving the tower of the weight which it sustained in the incongruous late groining, and in excavating between the piers from north to south, on either side of the tower, to the depth of 10 feet, and filling the cavities with concrete. Not only was the interior of the base of the tower so strengthened, but on the south and east sides an area of 32 feet by 28 in each was so dealt with, and a somewhat smaller area also on the north side. The next care was so to brace the upper portions of the tower as to prevent the possibility of the jarring, unavoidable in the process of under-pinning the piers (for it was requisite to begin the renovation of them from the foundations), from disturbing the shattered and disjointed portions above. To this end, in the highest chamber of the tower, in which the bells are hung, the architect introduced what he termed dragon-ties,—powerful braces of cast-iron; below these again, at the summit of the internal columns of the tower (those remarkable features of this structure which line the most spacious and magnificent lantern in the kingdom) a wooden ceiling of correspondent character, with the contiguous masonry, was introduced, and at the points of contact, and bearing on the walls so attached as again to act as an effectual brace and tie all round; and again, still lower down, just above the bases of the columns already mentioned, he placed another powerful range of wrought-iron rods, of large dimensions, having in the middle of each, over the crown of each arch, a double screw, so as to allow of the straining up of the whole square of the tower, in such a manner as to secure this portion of the fabric,—awfully cracked and riven as it was,—from further dislocation by such shocks in the progress of the works as were necessarily to be guarded against.

When, contracts being entered into, they began to restore the tower, it was found the crushing process had gone on so far, that when the front stones were drawn, the core ran out as sand would do: it was in such a state as at times to make it a matter of apprehension for the workmen. Additional shores were introduced. Although five tiers of large and powerful balks of timber, one above the other, and in four rows, on the interior side of the pier, were prepared and fixed to support its enormous weight, some of these were observed to buckle and bend in a degree requiring braces and struts to strengthen them, and others, when removed, were found to be so split and shattered, that in many places the fibres of the wood were completely dissevered, whilst at the bases of them, where they were shod with iron, and rested on iron plates in the soles or timbers placed at right angles to receive them, and these on solid masonry below—these soles were observed to have started from the masonry, being, as it were, partially raised at the ends. The date of the commencement of the contract for the tower was March 22nd, 1843, that of its completion, February 27, 1847. The first pier was commenced January 10, 1844—almost a year having been consumed in the preliminary works of the contract, as, for instance, the opening of the panels on the four sides of the tower, and the restoration of their jaumbs and features, bringing them down to the level of the adjacent panels; the reparation of the fractured masonry in the spandrels of the main arches; the securing of the different portions connected with them; the re-building of the window contiguous to this pier, in the north transept, west wall, together with the restoration of the ashlar, the parapet, and corbel table above it. You will not fail to perceive that considerable time was of necessity consumed in the fixing of the shores, especially the first. The average time, however, which each pier took in its restoration was six months.

I cannot easily describe the joy experienced by all concerned in the works, together with myself, said the Dean, when we saw that beautiful tower clear of these hideous excrescences; and found that when they and the shores were removed, and all the four legs of the tower received their destined weight, and bearing, the trifling subsidence resulting from this hazardous and courageous work was hardly perceptible, scarcely appreciable; it could hardly be regarded as the necessary sinking of such a process.

After rehearsing what had been done, a specification of the works required was read; but we have not room for more of this than what relates to *refitting the choir*.

"The ancient carved oak stalls and throne to be repaired and fixed in the choir with new oak floors, with new oak carved bench end-seats, choristers' desks, and seats, &c.

The organs to be remodelled and fitted up in the south transept against the western wall.

The entrance to the choir at the west end to be by gates of wrought metal, forming part of an open screen of metal work at back of stalls, according to design.

Metal desks with branch sconce lights to be fitted up for the choristers, in the situation shewn on the several plans.

A new communion table of suitable character, according to design, to be placed at east end of choir.

The fittings of the choir will also comprise, litany desk, eagle lettern of brass, sconces for lights, &c., &c.; also crimson velvet cushions, &c., to throne and prebendal stalls, with cut pile carpet hassocks; and brass gilt rods and standards and crimson silk curtains to throne; also a rich covering for communion-table.

The floor to be laid with a pavement of encaustic tiles. The steps to the communion-table to be of Purbeck marble polished.

The three windows at east end of choir to be glazed with painted glass, according to design.

A stone pulpit to be erected against the north-west pier of the tower, and appropriate oak seats to be *provided in the nave for the congregation*."

"This I need not say, remarked the Dean, is one of the most important features of the cathedral, and requires the most solemn attention. In reference to the open screenwork and the seats in the nave, I wish to explain that this has regard to the feeling which prevails in the present day more *strongly* than since the Reformation, at least than since the early traces of the Reformation, that our cathedral churches should be more capable of extended accommodation for worshippers; if not at the daily services, which may nevertheless be also at no distant period appreciated, but certainly on the Sabbath, and on special occasions. With a view to this, it has been suggested that the return stalls at the west end instead of being five in number should be three on each side; thus the space in the centre between them would be sufficient to afford that portion of the congregation beyond, the opportunity of joining in the services. And I should feel a pride and pleasure if Hereford Cathedral might set the example of so desirable an arrangement, to which no possible objection can be raised." "One word on the subject of the pulpit, placed, by the architect on the plan, and on this specification, in the nave. This under the arrangement of the stalls would hardly do, and is one of those points which must undergo consideration. It was probably in his knowledge that in the memory, I believe, of people yet living in Hereford (as at Ely now) the sermon was preached in the nave, and there are plans of the cathedral extant where its position is marked. It is also a curious fact, that till a late period there was no sermon in either of the parish churches, but after the prayers the people repaired to the minster to hear the cathedral sermon."

* See p. 502, ante.

To prevent the damp from striking through the walls, which it has hitherto done to the great injury of the fabric, it is proposed to cut a trench all round the cathedral, 4 feet wide, and 3 feet deep, to be filled in with concrete composed of gravel and stone lime, which should be sloped outwards and paved on the top to carry off the water.

The following is the estimate of costs:—

The general class of fabric works amount to		£10,184	0	0
Comprising Lady Chapel, Ante-chapel, Ambulatory, fence-wall, steps, &c., to crypt	£950			
Five eastern windows of Ladye Chapel, painted glass	700			
Lesser transepts	1,336			
Large transepts and aisle	3,438			
Restoration of nave piers and base plinths, lowering floors throughout, and sundry works to north and south aisle of choir	1,260			
Tile pavement throughout	712			
Plumbers' work ditto	830			
Glaziers' ditto ditto	393			
Various minor repairs, in different parts, not included	565			
		10,184	0	0
To this add Audley Chapel		750	0	0
Three painted windows for choir		450	0	0
Refitting and furnishing choir, completing organ, &c.		5,175	0	0
Reparation and underpinning of base plinth round the whole fabric, concrete dwarf wall of inclosure, gates, &c., and drainage		1,600	0	0
Contract for choir fabric, now in hand		3,168	0	0
Balance due to late contractor		872	0	0
		22,199	0	0
Architect's per centage, Clerk of Works at £2. 12s. 6d. per week; Foreman of the Masons, at £1. 11s. per week; and sundry salaries which may be due; and, perhaps, some requisites not now appreciable.				
Say a total of		£25,000	0	0

SUSPENSION OF RAILWAY WORKS.

The spread of the certainly enormous prospective calls on projected works over a greater number of years than those heretofore limited in the general rush for railway interweavement over all the country, is not sufficient, it would appear, to satisfy the demand for suspension of railway calls, even though seconded by the proposal to arrest those on the works and contracts on the eve of commencement. Contracts and works already in hand, must also be suddenly stopped, even though probably the capital to carry them out has already, in many cases, been called for and paid up. Accordingly, we find that the directors of various railways have not only determined to suspend the progress of unfinished works for the winter at least, but have already, in some instances, issued the fiat which will extinguish many a poor man's winter fire, and deprive him of the winter's provision for his family. And these announcements have been qualified with not even a word of sympathy for the evil thus thrust off the shoulders of the abler shareholder and speculator, on to those so much less able, or liable, to sustain them. On the contrary, almost every one seems 'glad to hear,'—'happy to learn,'—that such is the case. Verily, says the *Morning Herald*, our contemporaries' enjoyments must be few indeed, when such announcements make them 'glad' to learn such facts.

All works on the London and North-Western line which could be postponed (and those lines now exceed 500 miles in extent) have been indefinitely suspended. It is also said that the works on the Birkenhead, Lancashire, and Cheshire Junction are stopped, and that Mr. Brassy, the contractor, is under heavy advances to the company. The Basingstoke and Salisbury line, says a contemporary, like many others of the same kind, has been checked in its progress, the sub-contractors being limited in the quantity of work to be done; in consequence of which they have, at considerable loss to themselves, been obliged to sell off a large portion of their horses. Part of the staff has also been reduced, and many mechanics and labourers have been thrown out of work, and those remaining are employed at reduced wages. Considerable stoppages of work too have already taken place in Scotland, and announcements of an intention to stop others very shortly have been made both there and in England. The general reason assigned is, that the shareholders are resolved not to submit to any further calls for the present. We hear, says one paper, that a suspension of the works upon the Maldon, Witham, and Braintree line of railway, now in formation, is contemplated, to continue during the winter. There is a rumour, says another, that the works on the Great Grimsby and Sheffield Railway are to be suspended during the winter months. If this should prove true, it will be much regretted, for that part of the line between this place (Brigg in Lincolnshire) and New Holland is in such a state of forwardness, that the inhabitants have hitherto expected that it would be opened either in the latter part of the present, or the beginning of the next year. Here, too, there is a great want of even other and inferior modes of conveyance, which are both expensive and tedious. 'We are glad to learn,' says a Manchester paper, 'that not only on the lines and branches generally of the Lancashire and Yorkshire Railway Company have the works been for the most part suspended, but that the usual ratio of the company's expenditure in the provision of the stock, the erection of stations, and, in fact, in every department, has been greatly reduced, probably to the extent of some two-thirds to three-fourths of the whole amount. The works on one or two of the lines which are fast advancing to completion, are urged forward; but in all other cases arrangements have been or are being made with the contractors for the extension of the contract time, and for the present suspension of works to the extent we have stated. Already the discharge of numerous workmen and labourers on some of the lines and branches has commenced; and on Friday and Saturday last, several hundreds of men, including masons, joiners, carpenters, and labourers, were discharged from the Burnley branch of the Lancashire and Yorkshire Railway. It was there reported that the whole of the works of the company are to be suspended until next spring. This is, in the main, correct; but we have already stated that there were exceptions to this rule. We believe that the Wakefield, Pontefract, and Goole line is the principal of these; the works upon this line are still to be carried on with vigour.'

Since the above account was written, *we* are 'glad to learn,'—so far, at least, as regards the progress of works already in hand,—that from the arrangement entered into between Government and the Bank of England, for the temporary extension of its circulation, by the virtual suspension of its charter, 'a continuance of railway works,' as the city article of the *Times* has it, may now be 'easily foreseen.'

Mosaic Pavements at Northleigh.—Sir: Being in this part of the country, and hearing that there was a curious pavement to be seen at a village called Northleigh, about three miles from Witney, I went there, and found a beautiful mosaic pavement, about 33 feet long by 21 feet broad, composed of small pieces of white and black stone, and brick, each piece about ¾-inch square. It is tolerably perfect at present, but it is decaying in some places, owing to the admission of the rain through the thatch, which has been built over it since its discovery. I think it must have been the remains of a Roman bath, as there is a hypocaust underneath for heating, similar to the one discovered at Lincoln. The pavement is supported by square piers, about 6 inches square, composed of Roman bricks, 1¼ inch thick. There are flues ascending in different places round the edges of the pavement, about 5 inches square. There are also some broken capitals and shafts of columns lying about, and various other antiquities, which appear to have belonged to this Roman villa.—J. R. C.: Marlborough.

PROPOSED ARMY AND NAVY CLUB-HOUSE.

After much consideration and various alterations, the elevation of the Army and Navy Club is now decided on, and we place before our readers a representation of it as it will be seen from Pall-mall.

Although the design is based on the palace built by Sansovino, for Giorgio Cornaro, on the grand canal in Venice, about 1532, it differs very materially from that structure. The Cornaro Palace has three stories above the basement, Doric, Ionic, and Corinthian, and shews the roof, terminating on the modillion cornice of the upper order, as at our Reform Club. The frieze is devoid of sculpture, and has oval openings to light an attic story.* Messrs. Parnell and Smith, it will be seen, adopting the general arrangement of the ground-floor and first-floor elevation of this palazzo, but substituting coupled Corinthian columns for the Ionic of the latter, terminate their building with the entablature of the order, highly enriched with sculpture, and a balustrading as at the "Library," (reproduced for the Carlton), and other of Sansovino's buildings.

In the first instance, the design included, in accordance with instructions given by the club, a bow-window and a projecting portico. The buildings-act, however, prevented the first, unless the line of front were set back, and for the second, there was not sufficient room to ensure a good effect. The bow was therefore abandoned, and the portico gave place, at the architects' suggestion, to a recessed porch as in its part-prototype, the Cornaro palace.

The pilasters at the angles of the upper floor are shewn to be diminished towards the top, which in such a position, although not evident in our small view, could not have a good effect.

The following is a description of the principal apartments with their dimensions:—

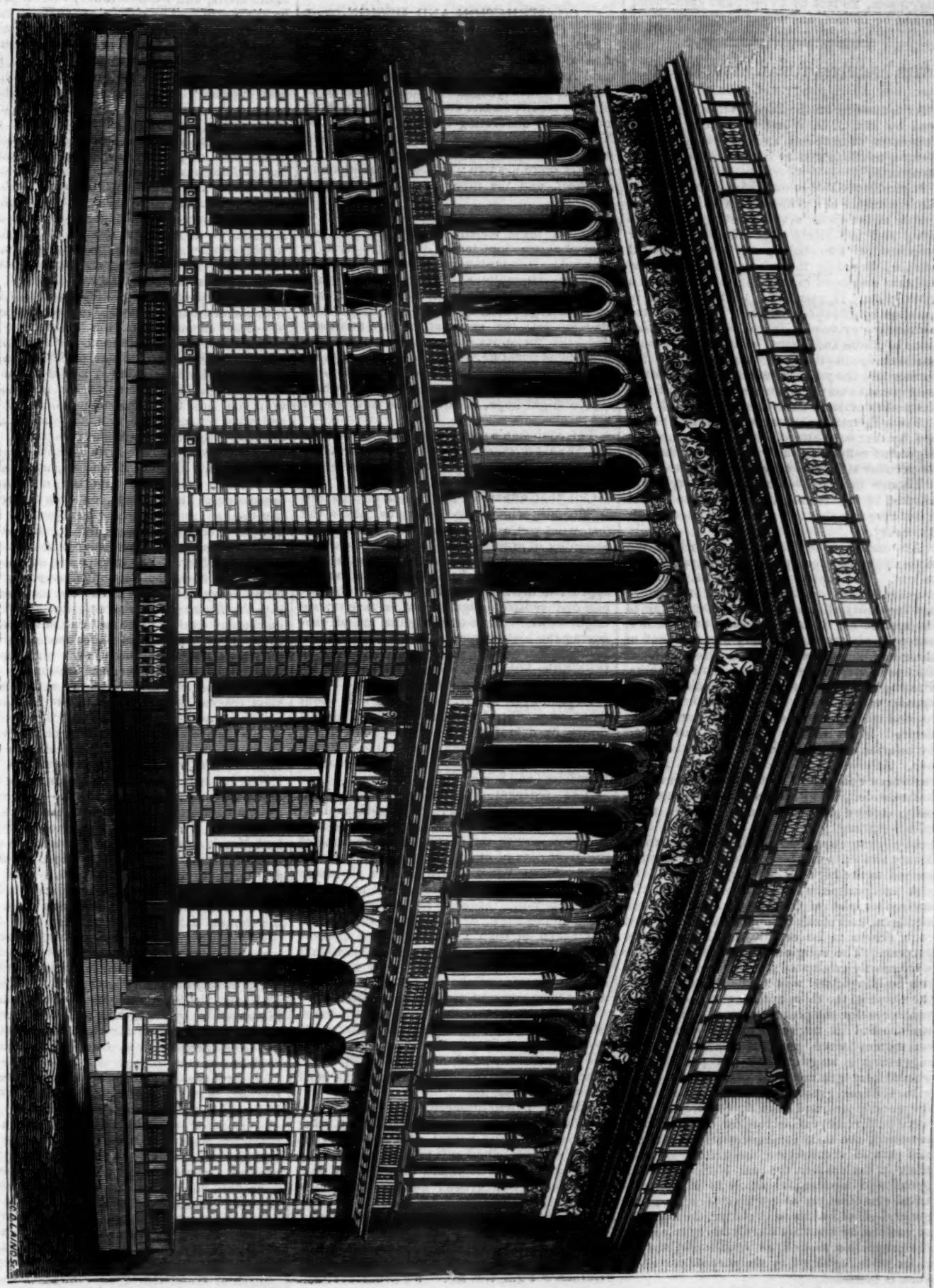
The ground floor contains a reception-room, on the left a morning-room, corresponding to which is a coffee-room lighted from each end, and an elliptical dome in the centre. The dome has an exterior covering of glass, between which it is proposed to light the room at night by a gas device encircling the whole circumference. By this arrangement, the necessity for any gas-burners with all the noxious concomitants of heat and imperfect combustion will be avoided, and a hot air-chamber provided, which, by the aid of flues, will afford a system of ventilation. *Between* this room and the visiters' coffee-room, lighted and ventilated in the same manner, and communicating with each, is placed the serving-room, connected with the kitchen by a lift, and the butler's serving-room; from this last is a direct communication to the dispensing cellars, while the room will be fitted up with ice-bins, hot and cold water, and presses for the reception of glass, none of which will be suffered to go below; there is likewise a separate entrance from the still-room. At the extremity of the building is placed the house dining-room, which has a separate communication from the kitchen, to which is attached an appropriate serving-room, and near it is a staircase leading to two bed-rooms for clerk of kitchen and second cook: the staircase on the opposite side is for female servants only. The water-closets are placed in the corridor, and have external ventilation.

The Mezzanine floor is devoted to the members' bath and dressing-rooms (twelve in number), and the house-keeper's department.

The first floor is approached by a branching flight of steps, one arm of which leads to the secretary's rooms, extra writing-room, and upper floor, containing the billiard, card, and smoking-room, and the other to the evening-room (the same dimensions as the morning-room), library and writing-room. The secretary's and extra writing-rooms are divided in altitude, to form an entresol for a still-room, to supply tea and coffee to the first and second floors, with sleeping-rooms for waiters, &c.

Ground Floor.—Loggia 35 feet by 6 feet 6 inches; vestibule, 26 feet by 18 feet; staircase, 47 feet by 26 feet; coffee-room, 82 feet by 39 feet; morning-room, 76 feet by 28 feet; strangers'-room, 46 feet by 29 feet; house dining-room, 29 feet by 20 feet.

* A representation of the Cornaro palace and the details are given in Cicognara's "Venice." Those who would seek this work through that profoundly obscure production, the British Museum Catalogue, must look under the head "Diedo."—*Le Fabbriche di Venezia.*



PROPOSED ARMY AND NAVY CLUB-HOUSE.—Messrs. Parnell and Smith, Architects.

First Floor.—Evening-room, 76 feet by 28 feet; library, 40 feet by 32 feet; writing-room, 33 feet by 18 feet; extra writing-room, 26 feet by 18 feet; secretary's apartments, &c.

Second Floor.—Smoking-room, 40 feet by 34 feet; smoking billiard-room, 33 feet by 31 feet, with card-room, 27 feet by 18 feet; billiard-room, 28 feet by 25 feet; and card-room, 25 feet by 16 feet, and servants' apartments.

THE ARCHITECTURAL ASSOCIATION.

At a meeting on the 22nd inst., a paper was read by Mr. J. D. Wyatt, "On the leading Principles of Ancient and Mediæval Architecture, as illustrated by Sacred and Domestic Structures."

It commenced by some prefatory remarks on the importance of architecture, whether viewed simply as the sister art of painting and sculpture, and intimately connected with other branches of knowledge,—or as a practical science, directing the labours of the various artizans employed in carrying into execution a given plan. It proceeded to the subject in question by directing attention, briefly, to the elementary principles in the massive productions of India and Egypt, as exemplified more particularly in the *cave architecture* of the former and the ponderous temples of the latter, with remarks on the materials made use of, and the nature of their construction.

From Egypt the art was learnt by the Greeks, and by that enlightened people brought to a degree of refinement and perfection which, in its peculiar style, has never been surpassed.

Thence to Italy.—The Grecian style was adopted by the Romans, with variations, but these were for the most part deviations from its beauty.

An exception is *Corinthian*, in which the example of Jupiter Stator is particularly excellent. The capital and ornaments throughout the temple are marked by peculiar elegance and ingenuity of design. The writer explained the system of Roman domestic architecture, and pointed out the ordinary arrangement of their buildings, as evidenced by the remains at Pompeii and gathered from Latin authors. Passing over the degenerate productions which sprung up after the downfal of the empire, he said the *Saxon* and *Norman* works were derived from Roman principles, carried out by inferior workmen, and in an inferior manner. After the twelfth century, when the disturbances consequent on the Norman invasion had subsided, architecture became systematically studied in this country. From these efforts sprang "pointed" architecture, eminently picturesque and original, in which beauty and mathematical contrivance were exercised to the highest degree.

A comparison was instituted between the ancient temples of Greece and Rome, and the mediæval cathedrals of our own country, and each shewn to be equally well suited to its purpose. The religious rites of the former were mostly celebrated in the open air, while the building itself was devoted exclusively to the statue of the deity and its altar,—with conveniences for the preservation of sacred treasures. But in our own colder climate the ceremonies were performed under shelter, suggesting a lengthy nave (for processions), whose lofty groined roof invested the whole with sublime grandeur. Aisles were added for worshippers, and a choir (where the rites were performed) exclusively for the priests. In reviewing the main differences between classic and pointed architecture, the writer suggested that, in the former, the aim is to produce a grand and harmonious whole by the symmetrical combination of parts subservient to the general effect; while in the latter, the necessity of uniformity is almost utterly disregarded, and the proportion as well as situation of the various parts regulated by the purpose for which each is intended.

This summary was concluded by a few hints on the *principles of design*, the tenor of which was to shew, that reality and utility should be the basis in every structure, blended with a judicious proportion of enrichment.—The completeness of a building as well as its beauty mainly results from its fitness to its purpose. A good plan is essential to the formation of a good design. While the specimens of art bequeathed by our forefathers are worthy of our most attentive study, it is in the investigation of the principles on which they are founded, rather than by a servile imitation of individual portions of their works, that true excellence is to be expected.

CONSTRUCTION AND DESIGN.

Sir,—Certain views enunciated by the chairman at the recent meeting of the Architectural Association, have, to my thinking, a mischievous tendency, notwithstanding an apparent effort to modify former definitions to something more nearly quadrating with ordinary notions. Not a great while ago there was but one thing worthy of the name of architecture,—now, it appears there are two; but one is architecture *artistical*, and the other architecture *professional!*

But in the name of common sense, I ask, to what do these violent distinctions and far-fetched abstractions tend? Verily, I trow, to no good. It is tantamount to returning to the days of disputatious schoolmen, and word-mongers. Comté hath it, that every branch of knowledge passes successively through three stages. 1st, the supernatural or fictitious; 2nd, the metaphysical or abstract; 3rd, the positive or scientific. Now, it appears that we are to turn back and lose ourselves in the labyrinthian intricacies of the second period, when, as one might hope, we are on the threshold of the third.

The chairman's assertion, that what he calls the "fine art of design" "stands essentially distinct and essentially alone," he has never taken the trouble to prove.

Call that attempted abstraction of a part of architecture which is to be exalted above the rest, what you will—call it, for instance, the designing of architectural scenery and decoration, still I cannot see that the student will be a whit better prepared to learn. In short, it appears to my simple self that the art of absolute or inventive design cannot be taught; we might as well talk of teaching the art of producing the highest species of poetry. In either case you can teach the grammar, as it were, of the art, the hitherto accepted rules, and furnish examples: what more can you do?

Depend upon it, Mr. Editor, this talk about "fine art architecture" may do considerable injury by deluding ardent, imaginative, and unreasoning youths, and leading them astray from that which would be of most use to themselves and society.

The segregation of fine-art design from architecture is talked of! Shades of the illustrious Michael Angelo and Christopher Wren, what say you to this? or turn we to some of the great ones of other fine arts. What would Leonardo da Vinci or Sir Joshua Reynolds have said of the segregation of fine-art design from painting,—throwing the science of anatomy to the dogs! or the giants Handel and Beethoven, of such a divorce of one element from another in music, throwing overboard that abstruse science, harmony? It is not difficult to conceive of the kind of response one would have met with from the two latter.

Then as to the notion that more honour belongs to the fine-art abstraction than to the realities of architecture! This is peculiarly the age of utility; and, of things nearly allied, mankind will be found to honour that most which is most useful.

Finally, I will observe, that one thing is absolutely certain,—incontrovertible, viz., that construction is the parent of whatever exists in architecture, whether it be beauty, sublimity, or what else, and it is but questionable taste methinks, to yield greater honour to the thing produced than to the producer.

The author of the "Newleafe Discourses" will not, I trust, take offence at the freedom of my comments, which are written solely with a desire for the ultimate establishment of the truth. I am, Sir, &c. Frank Oliver.

London, Oct. 16, 1847.

A Hint for the Royal Academy.—The council of the Royal Manchester Institution have announced their intention of opening an evening exhibition of the works of modern artists, the charge for admission to which is fixed at *twopence*.

NOTES IN THE PROVINCES.

Emmanuel Church, Weston-super-Mare, designed by Mr. Manners, of Bath, architect, and built by Mr. Edward Gregory, of Weston-super-Mare, was consecrated on Friday last. It consists of a nave and chancel, north and south aisles, and western tower, with a porch on the north. The chancel is separated from the nave by carved stone screens. The pulpit is of stone. The pews accommodate about 700,—300 free.——The Somerset County Lunatic Asylum is still unfinished: 40,000*l.* have been expended on it, and 10,000*l.* more have been called for.——St. Sidewell's Church, Exeter, has been repaired and cleaned, and was re-opened for divine service last Sunday. The bosses of the roof have been gilt: painting and decoration by Mr. R. Pentecost, of St. Sidwell.——The new Roman Catholic Church of St. Francis Xavier, at Usk, in Monmouthshire, was opened on Friday week. The structure is in the Gothic style of the fourteenth century, from designs by Mr. Charles Hansom, of Bristol, architect. It consists of a nave and south aisle, chancel, sacristy, and porch: length internally 65 feet, width 30 feet, with accommodation for 200 in nave and aisle. ——The committee of the Gloucester and Berkeley Canal Company, on the new docks, &c., report that a further sum of 5,000*l.*, in addition to that of 16,000*l.*, already granted, would be required to complete the new docks, as it had now been ascertained that culverts and other extensive works, not included in the original estimate, would be required; they therefore asked power to raise 21,000*l.*——The contractor for the new town-hall, at Dudley, Worcester, refuses to give the magistrates possession of the building, or even the architect the key, until paid or guaranteed the sum of 500*l.* over the estimate, for certain alterations and embellishments ordered to be made in the building. The magistrates do not feel justified in incurring individual responsibility for so heavy a sum.——Christ Church, Cosley, says the *Birmingham Journal*, was re-opened on Sunday week. The east end has been entirely reconstructed, under the superintendence of Mr. G. E. Hamilton, of Wolverhampton, architect, a chancel formed internally, with screens, and an east window, with stained glass, inserted by Mr. Warrington, in foliated spandrils, with cinque-foils and figures.—— A new parish church for the growing wants of Swindon, is on the tapis. A site has been offered by the lord of the manor, and 1,000*l.* towards the erection by his relative or namesake, Mr. Goddard, M.P.——It is in contemplation to erect two new district churches at Westham, one contiguous to Stratford Marsh, and the other at Forest Gate.—— The subject of free access to Lincoln Cathedral is under consideration of the dean and chapter.——A Gothic stained-glass window, says a Lincolnshire paper, has been placed in the chancel at Belton parish church.——The *Albion* states, that on Friday last, no fewer than fifty persons were fined at Liverpool for refusing to quit cellars not in conformity with the provisions of the Sanatory Act.—— On the 12th inst., the foundation-stone of a Wesleyan Methodist Chapel was laid at Edwinstowe, in the Worksop Circuit; Mr. Simpson, Architect. ——The erection of a covered butter market at Barnsley is at present under consideration. The expense, according to the *Doncaster Gazette*, is to be defrayed by subscription, there being no local fund for such a purpose. ——Those who knew Glossop Dale twenty years ago, says the *Derby Mercury*, would now scarcely recognize it. Factories have been erected, houses built, markets established, town-hall, police, and courts of justice appointed, and, 'to crown the whole,' a branch line of railway, from the Manchester, Sheffield, and Lincolnshire, has been in operation for more than two years.—— Although upwards of 10,000*l.* have been expended on the parish church of Huddersfield, says the *Leeds Intelligencer*, it is not only still surrounded by old buildings which are a disgrace to the edifice and a discredit to the town, but these very buildings, which a recent fire had considerately endeavoured to remove, are again under process of repair.——The subscription for the rebuilding of the very inadequate infirmary at Durham, is said to be advancing very successfully; 5,000*l.*, says the *Gateshead Observer*, will provide another.

WESTMINSTER COURT OF SEWERS.

A SPECIAL court was held on Friday last; Capt. Geo. Bague, R.N., in the chair.

A memorial was presented from the inhabitants of Grove-place, Brompton, setting forth that disease and miasma prevailed in that district, and although there were upwards of seventy houses in the place named, that no sewer existed, and that the only receptacles for the drainage of the houses consisted of cesspools, which were frequently required to be relieved. The matter was referred to the surveyor, as was also a petition from the inhabitants of Earl's-court, Brompton, complaining of the want of drainage.

A communication was received from the vestry-clerk of Hampstead, written by direction of the board of guardians of that parish, complaining of the wretched state of the drainage of West-end, Hampstead, causing the most pernicious consequences to the children in the school-room, and calling for an immediate remedy. The allegations were confirmed by Mr. Law, and other members of the Royal College of Surgeons, as to the unwholesome nature of this district. This communication led to a long discussion, and it was finally referred to the surveyor, to report immediately thereon.

The Powers of the Commission.—A very lengthened discussion arose on the question submitted by a Mr. Carter, of Paddington, to this court. Under the provisions of the new Act, passed for enlarging the powers of this commission, it is required, that before any new house is commenced an efficient drainage shall be constructed, if any public sewer exists within 100 feet of the projected new building; and in this case Mr. Carter wished to know, as he was required to build the sewer past several existing houses, whether he should be enabled to call upon the owners of such property to contribute towards the expenses of the same?

The solicitors to the court gave it as their opinion, that the owners of the existing houses might be called upon to contribute providing the houses had not been erected more than thirty-five years.

Some members of the court having expressed doubts as to whether the construction put by the solicitors on the powers of the Act was a correct one, it was agreed that a case should be prepared and submitted to the Attorney-general, and Mr. Bovill, to ascertain their opinions respectively thereon.

A letter was read from Mr. Farlar, in answer to an application made to him to know what sums had been paid and received by him in reference to the sewer in Alexander-place, Brompton, in which he stated that any questions of this kind were unlawful and uncalled for, and that he refused to answer them. Some discussion ensued upon the subject, and it was resolved, "That the surveyor do report on the contribution per foot to be paid by the occupiers or owners of premises to be drained in the sewer referred to in Mr. Farlar's letter."*

Improvement of the Drainage of Westminster.—The court then proceeded to consider the surveyor's report on the improvement of the drainage of the parishes of St. Margaret and St. John, Westminster, with the government offices, in Downing-street, &c. This document appeared in THE BUILDER, *in extenso*, some weeks since,* when the report and plans in reference thereto, were ordered to be submitted to her Majesty's Commissioners of Woods and Forests, to which the following answer has been received:—

"Office of Woods and Forests,
Oct. 20, 1847.

"With reference to my letter of the 17th inst., stating that the Commissioners of Woods and Forests had not been able to come to any decision, in regard to the sewer proposed to be built by the Court of Sewers for Westminster through Parliament-street, with an outlet to the Thames at Richmond-terrace, in consequence of Mr. Lomax, the surveyor empowered by them to report thereon, having been prevented from doing so so fully as he wished,—not having seen detailed plans and specifications for the intended sewer,—I have to report on the part of the board, that he further states, that he has inspected the plans and received such explanations as he required from you and from Mr. Phillips in regard thereto, the result of which has been, in some degree, to remove the objections, stated in his former report, to the construction of the sewer in the line and in the manner shewn by the plan and printed report, which accompanies your letter of the 8th inst.; but that he is still of opinion that the new sewer should be carried on to Whitehall, for the purpose of improving the drainage of Whitehall (which is very defective), of the government offices and houses in Whitehall and its vicinity. This opinion Mr. Lomax states that he communicated to you, but that it was proposed to remedy this defective drainage above-mentioned by the construction of such branch sewers along Whitehall as should be necessary, the expense of which would be much less than continuing the new main sewer as suggested by him, and the remedy equally efficient. Under these circumstances the board would not feel themselves justified in giving their sanction to the projected sewer until they shall have laid before them plans of the branch sewers proposed to be formed in Whitehall, and be informed when it may be expected the same will be constructed. I have also to state that, as the board have some doubt whether or not the thickness of one brick, as proposed by Mr. Phillips, is sufficient for a sewer of the size and extent of that now proposed, they have thought it right to consult Capt. Vetch upon that point, but that before giving an opinion on the subject, he has expressed a wish to see a longitudinal section of the ground, shewing the position of the drain in regard to the surface and nature of the soil as far as ascertained, and also to know if the whole of the brickwork (or what portion) is to be laid in cement; whether the bottom is intended to be laid on blocks, and the method proposed for laying bricks throughout? and, likewise, whether it is expected that the sewer will ever be subject to a pressure of water on the soffit of the arch? and I have to request that you will move the court of sewers to furnish the board with information on these points.—I am, Sir, your obedient servant,
"CHARLES GORE."

Mr. Harrison thought, that in thus applying to the Woods and Forests they had acted unwisely, and that it was not a dignified course for them to have pursued.

Mr. Willoughby said, that in consulting the Board of Woods and Forests as a public body, this court believed they had a common interest in the matter, but the drainage of Whitehall he conceived to have nothing whatever to do with the case. The communication they had thought proper to make to the Commissioners of Woods and Forests, was for the information of that board rather than an acknowledgment of any control they might have in the question.

The surveyor said he had subsequently given great attention to the subject, and had with the clerk gone over the whole of the ground again, and he had seen nothing to alter his opinion of the propriety of the course he then proposed.

After a few observations from other commissioners, it was proposed and carried unanimously, that the clerk do communicate to the Commissioners of Woods and Forests, that this court will proceed with the plans as laid down by their surveyor; and that the drainage of Whitehall will be a subject for separate consideration.

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* Mr. Farlar has since forwarded to us the following copy of the communication, with a request that it should be inserted:—

"38, Brompton-square, 22nd October, 1847.

"My lords and gentlemen,—The undersigned having received from your clerk a note inclosing a document (copy of which is hereunto annexed), purporting to be a copy of an order of court, said to have reference to sewer owners' claims, I beg to say I consider so much of the order referring to what sum or sums sewer owners may have expended or received, foreign to the business of the commission, and I refuse to answer the same as unlawful and uncalled for. Permit me to say, your orders of court and bye-laws must be consistent with sense, justice, and the common rights of the subject, or they are not maintainable.

Your honourable court is directed by the 10th and 11th Vic., c. 70, to arbitrate upon and assess (as true and honest men, agreeable to their oath of qualification, without favour, corruption, or malice), the true value for the frontages of sewers owners may have to convey, and without loss of time to put into operation the said Act, now four months old (and nothing done). The said copy of order of court also sets forth, that it is required of sewer owners to present a plan of the entire length of the sewer or sewers to be built by them.

The undersigned claims of the court an explanation of its anomalous document. What can claims for sewers already built have to do with those which are 'to be' built?

That your honourable court has great powers (with narrow liabilities for retribution to the injured) must be admitted, and in a great measure endured.

However absurd the recited order per copy annexed, the undersigned doth (to avoid loss of time) herewith cause to be delivered a plan of the sewer he built (not 'to be' built) in the year 1829. The undersigned also hereby gives notice to your honourable court, should it not forthwith proceed to compel parties to build covered drains, as per section 7 of the said Act, for the premises per his list delivered to your honourable court, bearing date 15th October inst., he will, on the arrival of the November term, apply, as per counsel he may be advised, to her Majesty's Court of Queen's Bench, to enforce the commission to render him that return of his property, provided for by the said Act of Parliament. The undersigned begs to remind the board of commissioners, the obtaining the said Act was craved by themselves, and granted as a reprieve, or, in other words, a protection from total annihilation of your commission, threatened by the bill designated as the Health of Towns' Bill, as introduced into Parliament by Lords Morpeth and Russell.

Your honourable commission having thus obtained new powers, obligatory upon the commissioners as well as the public (at the enormous unnecessary expense of more than 900*l.* of the ratepayers' money), have omitted every act for carrying out the said new powers, although the winter is close at hand, and fears prevalent the nation may again be visited by that scourge designated the cholera. The undersigned, by his address of the 18th inst., gives your court two drafts for the promotion of the requisite steps for carrying out the said new Act, viz., the 10th & 11th Vic., c. 70, as the only measure for promoting the public to aid in forwarding the objects of the Act, and which your court must, however reluctantly, in the end adopt.—I am, gentlemen, with all due respect for my brother commissioners, your obedient servant,
WM. FARLAR."

The following is a copy of the "order" in question:—

"Resolved, that owners of sewers built within thirty-five years, who shall make application under the new Act for parties to be compelled to lay drains into such sewers, be required to present a plan of the entire length of the sewer or sewers "*to be built*" by them, shewing the several houses and premises fronting thereon, with the sums already paid for each house from which a drain has been laid, and also shewing the length of frontage, and the amount demanded for laying a drain from each of those houses from which they desire that a drain should be now laid into the sewers so built by them."

After the above was in type, we received from Mr. Farlar, too late for insertion (even if we could afford space), other papers, and a letter, complaining of our having headed our report, "Illegal Conduct of a Commissioner." The report in question professes to be nothing more than a record of the proceedings of the court, and the court pronounced the conduct illegal.

* See p. 495, *ante*.

New Books.

Observations on Limes, Calcareous Cements, Mortars, &c. By Major General Sir C. PASLEY. Second Edition: Part I. Weale; 1847.

A SECOND edition of this valuable work has been required for some years past, but the author was unable to give time to a revision of it till lately. He has now issued a first part only, but promises the completion in a few months. Since the publication of the work, artificial cements have been made and used extensively, so as to justify the opinion General Pasley had advanced in this respect.

We shall hope to find some few alterations in the appendix of the present edition. The author has experienced more ill-natured abuse himself since he wrote it than he had before, (much of it uncalled for, and not to be justified), and may feel anxious to avoid paining others.

We recommend the work to the study of all engaged in construction to whom it may still be unknown.

Correspondence.

ORIENTATION OF CHURCHES.

DEAR SIR,—Your correspondent of the 4th, "A Churchman," has himself *singularly overlooked* the Rubric, part of which he quotes, as it is ordered that "the table shall stand in the body of the church, or in the chancel, where morning and evening prayers are appointed to be said." I presumed every ecclesiologist was aware that this Rubric was framed to meet the want of what you term "orientation" (or what is better known in the country as "east-and-westing") in the parish churches of our happily Protestant island, as the priest can invariably comply with the whole of the Rubric, when attention to a part might seem to involve an inconvenience.

In many cases it would be much better to have disregarded this symbolism, as nothing is more painful than to enter at the chancel end of a church and to proceed down an aisle to a seat, meeting so many strangers' eyes.

Pardon the intrusion of a female upon the valuable columns of THE BUILDER, and believe that I am, Sir, your obedient servant,
A CHURCHWOMAN.

Day of the Feast of St. Luke, 1847.

DISTRICT SURVEYORS' FEES.

SIR,—Allow me to correct what I consider to be an error in your last week's publication. It is simply as to the proper position of an apostrophe, in the following sentence:—"District surveyors' fees,—a pretty specimen." This clearly implies that the specimen is one of a class, which I deny; but place the apostrophe *before* the s, and the specimen becomes that of an individual, which I admit,—and sorry I am to do so.

Before the account in question appeared in your paper, it had been examined specially and condemned universally by the body of district surveyors; and after the expression of their decided opinion on the subject, I have reason to believe that such unfounded claims, alleged to have been made through error, will in future be relinquished.—I am, Sir, &c.

Oct, 25, 1847. AN OLD D.S.

TREATMENT OF BUILDERS—ESTIMATES.

SIR,—Not the least among the many annoyances to which respectable tradesmen engaged in the building and repairing of houses are subject, is the one arising out of the practice of persons, requiring the smallest repair or renovation to interior or exterior of their house, calling upon them to furnish an estimate of the expense (without any intimation of a competition), with no other view but to arrive at such knowledge as may enable them to seek different tradesmen, and by tempting them with the assurance that such and such a one has offered to do it very low, induce some unfortunate to take it at a profitless price under the vain hope of future employ. I would advise every man who may discover that his judgment and time have been thus made use of, to charge for his estimate, and thus put a check upon such unprincipled conduct.—I am, Sir, &c., A SUFFERER.

Miscellanea.

Projected Works.—Tenders have been called for by advertisement for the extension of Sewers in the Tower Hamlets; for building of sewers in Kensington; for building a new south wing to the St. Olave's Union Workhouse, Southwark; for the excavation of a patent slip and a wall foundation at Hamington, with iron-work and machinery for slip, mason and wallers' work, &c.; also for the construction of three-quarters of a mile of the Birmingham, Wolverhampton, and Stour Valley Railways, amended tenders.

Example to Masters who want Healthy Active Workmen.—"There are sceptical people," says the *Gateshead Observer*, "who throw cold water on all onward movements—even on public baths and washhouses. The working classes, they say, would not go to baths, if you were to build them. But the experience of London, Liverpool, Manchester, and other towns, proves the contrary; and we are not without similar evidence in Newcastle and Gateshead. The lessee of the public baths in Northumberland-street has wisely made reductions, from time to time, in his scale of charges, and is now issuing sixty tickets for 1*l.*, each of which will secure the holder a warm bath and a towel. At the Literary and Philosophical Society lately, Mr. M'Kelvin, of Abbot and Co.'s, stated that he had purchased a pound's worth of these tickets, and on his return to the Gateshead park works, soon found customers for them all, at fourpence a ticket. We trust that in every great public establishment in Newcastle and Gateshead there will be found a Mr. M'Kelvin." If masters, in districts or towns deficient in cheap baths, or even where such baths already exist, were to create an increased demand for them by the offer to purchase and distribute tickets, at low prices, amongst their workmen, doubtless both masters and workmen, as well as bath-keepers, would derive considerable profit from the speculation. The moral influence of the masters would thus be brought to bear exactly upon those least likely, yet most requiring, to seek the aid of the flesh-brush, the soap, and the bath; and thus additional activity and spirit, as well as health and cleanliness, would be infused into the workshop.

Disregard of London Antiquities.—In the ninth part of Mr. C. Roach Smith's valuable *Collectanea Antiqua* (etchings of ancient remains illustrative of the habits and history of past ages), the author finds reason again to refer to the "perfect disregard in which our city antiquities are continued to be held by the city authorities." He says that a piece of Roman sculpture found during excavations for a sewer in Hart-street, Crutched Friars, representing the *Deæ Matres* or *Matronæ*, which "throws a light upon one of the forms of worship prevailing in Roman London, and has been made the means of instituting successful inquiry into the superstition of our ancestors, at the present moment lies neglected in an outhouse in the city stone-yard."

Statues.—A proposal from Mr. Milnes to erect a statue of Nelson, in Norwich, has been accepted. The statue is to be seven feet high, and to cost 700 guineas. The bishop is interesting himself in favour of the project: the same artist has been selected by the Board of Ordnance to execute the full length of of the Duke of Wellington, to be placed in the Tower of London.—In Edinburgh, twenty-four Waverley figures are still required to complete the Scott monument. Another Waverley ball is to be got up to raise the sum required (2,000*l.*).—Gibbon's second statue of Huskisson, recently erected in Canning-place, Liverpool, is of bronze, and stands nine feet high.

The Triforium.—Sir: Permit me, through the medium of your columns, to inquire the derivation and meaning of the word "Triforium."—*A Subscriber.*

*** The gallery (*fori*), or open space, between the vaulting and the roof of the aisles of a cathedral or church, opening into the nave, transept, or choir, by an arcade over the main arches, is called the "triforium." In modern times it has come to be applied to the range of arches or panels between the top of the pier arches and the bottom of the clerestory windows, even where there is no gallery, but merely the semblance of it.

The state of Birkenhead.—The *Liverpool Courier* gives a melancholy picture of the present appearance of Birkenhead. After detailing the number of new buildings unlet, amounting in value to 70,000*l.*, the writer says, "the above-named are only a few instances amongst the vast bulk of apparently lost and desolate property in this unfortunate place. The great extent of closed premises in the secondary descriptions of streets, it is needless to particularize—suffice it to say, that they may be seen in every direction. Splendid private houses, too, in immediate proximity to the business part of the town, and beautiful villas more remotely situated, seem also to have alike shared in the general flight which has taken place; while the dismal-looking batches of partially erected buildings, some just covered in, and others with the rough and rugged walls scarce half built up, left to fall into dilapidation and decay from the inability of their owners to complete them, give a melancholy finish to the picture which may well challenge a parallel in the annals of premature speculation, or of commercial reverses." Still as he says, "The gloom that hangs over Birkenhead is partly owing to the stagnation and want of confidence that everywhere prevail. When these pass away, her prospects will of course brighten, her buildings will again be tenanted, and her streets and public places once more resound with the hum of business. The advantages of her position, and her inherent capabilities, remain the same; and though it may be some time before her realised resources fill up the gigantic outline which the sanguine anticipations of her projectors have sketched, still while Liverpool continues prosperous, that prosperity cannot fail to be largely participated in by Birkenhead." Since the appearance of the article from which the foregoing is taken, a proposal of assistance from Government has been made and accepted. "The government is to resume possession of the piece of made land on the north side of the entrance to the great float, and, on condition of that land being reconveyed to the Commissioners of Woods and Forests, they engage to pay the expense of completing the sea wall, reserving to themselves the right of making any use they think fit of the land, and to make as many slips and sluices as they may require. It is supposed that this stipulation is made with the view of converting a portion of the land into an arsenal." The amount already expended on the sea wall is 21,000*l.*, and it is estimated that, to complete it 44,000*l.* more will be necessary. This amount government offers to give, on the conditions above-named, and, in addition, to advance 150,000*l.* for the purpose of finishing the great float and embankments, so as to bring the dock into condition for business. The government are to receive, in part, as collateral security, township bonds to the amount of 35,000*l.* Birkenhead will yet realize in great part the expectations of those who created it.

Caution in Cleansing Cesspools.—The Long-acre tragedy has been recently rehearsed, if not acted over again, at Tittenhangers, an estate of the Dowager Countess Hardwicke, where, according to the *Hertford Mercury*, in order to destroy the unpleasant odour from a cesspool while cleansing it, the gardener, with that, in this instance, dangerous qualification, 'a little knowledge,' proceeded to 'disinfect' it by help of oil of vitrol; and while the diabolical fumes of sulphuretted and phosphuretted hydrogen, thus liberated of a sudden from their alkaline fixative, were still salient in the pool, his assistant descended into it and was of course immediately laid prostrate. Nevertheless, unwarned by the result, another labourer followed, in order to rescue him who had found his position too deadly for his own rescue, and *he* was as speedily reduced to insensibility. A third, nevertheless, followed his leader with the same result, and a fourth the third. At length experience taught even unthinking mortals such as these that other measures ought to be adopted; and the whole were withdrawn by aid of poles and ropes. Some hopes, strange to say, are still entertained of their recovery. How the idea of 'disinfecting' cesspools or sewers by help of oil of vitriol originated, it is hard perhaps to say, unless it might be in the expectation that a combination of sulphur and oxygen, such as it is, would neutralize one of sulphur and hydrogen, leaving nothing but sulphur and water; but it ought never to be forgotten that cesspools and sewers will always abound with soda, potash, and probably lime, which will hold these '*hydrasdire*,' if we may so call them, in a fixed state, and that sulphuric oxyacid will itself be neutralized by the alkaline bases, and will liberate in place of destroying the poisonous hydrides.

Improvements in Casting Cylindrical Pipes.—Mr. Stewart, of Montrose, has taken out a patent for a new mode of casting iron water or gas pipes, by which a superior material is produced, at a less cost than by the usual method. The mould consists of a perpendicular cylindrical iron box, of the required size, with a shaft in the centre, longer than the mould, and communicating with machinery above, by which it is kept revolving, and, as it revolves, it gradually rises. At the bottom of this shaft is an instrument, which may be termed a "presser," or "rammer," consisting of an iron block, having inclined tabular faces, of such smaller diameter than the box, as to leave the sand of the required thickness for the mould. On feeding the sand at the top of the box, it is distributed towards the sides, and the shaft and rammer, gradually revolving and rising, press it with great force against the sides of the box, leaving the mould finished and perfectly cylindrical on its arriving at the top, ready for the insertion of the core. The amount of pressure against the sand is regulated by means of a counterpoise weight. The following are the advantages claimed by the patentee:—"1. A perfectly straight cylindrical pipe, of uniform thickness.—2. No parting or joint of any kind.—3. Dressed at one-half the ordinary cost.—4. Less sand used than in any other way, and, of course, easier dried, if required.—5. The castings and sand easier removed from the boxes than in the ordinary way.—6. The flasks, or boxes, better calculated to resist the pressure of the metal than any now in use.—7. This method is the best for casting pipes perpendicularly that has hitherto been employed.—8. The greatest recommendation of all is, the simplicity of the apparatus, which requires the attendance of a boy only, who with my machine, as at present working, turns out easily six pipes, six inches bore, per hour."

Middlesex Lunatic Asylum Competition.—On Wednesday last the committee, as we are told, made their first selection of twelve from the designs submitted to them. It is said that the plans will not be exhibited, some of the competitors having expressed an unwillingness to allow their ideas to be seen by others than the magistrates. Should this really be the fact, which is scarcely credible, they will soon have reason to regret their short-sighted policy. Such a case as this would serve as a precedent to other parties for refusing to exhibit competing plans, and thus the only check on committees advertising for designs, small as it is, would be lost.

A Check-string for Engine Drivers.

Sir,—It occurred to me about two months since, that an improvement for the safety of the public might be made in the construction of the locomotive engine, by having the foot-plate on which the engine driver stands, supported by springs and attached to a lever, so connected with a valve on the top of the steam pipe in the dome of the boiler, that, should the engine driver leave the plate either by accident or design, in imminent danger, the springs under the foot-plate should cause it to rise, and by closing the valve above named, effectually to shut off the steam from the cylinders. The engine driver, when in his place on the foot-plate, would have the same control that he now has.

Brighton. Allen Anscombe.

TENDERS.

Tower Hamlets Sewers.—Mile End Road; Sewer, 4 feet 6 inches by 2 feet 6 inches; length, 898 feet.

Shalders	£775
Stewart	700
Yeomans	646
Munday	627
Crook	597
Livermore	576
Hill	567

TO CORRESPONDENTS.

"*Burial in Churches.*"—A correspondent complains of some proceedings in Croydon Church, on the occasion of a recent interment.

"*Old Subscriber.*"—Cast-iron baths are being used extensively.

"*Constant Subscriber.*"—The committee appear to have the power to act as they propose."

"*Subscriber.*"—So far as we know, the atmospheric apparatus on the Croydon Railway must be regarded as a failure.

"*Stains in Marble.*"—A correspondent asks to be informed, how he can remove mahogany and smoke-stains from statuary marble.

"*A Subscriber.*"—The January and February Parts are out of print.

"*Coal-Market Estimates.*"—Mr. Nicholson writes,—"I beg to inform you, that although our tender was made out and ready to be delivered with the rest, still, on account of the 'Arbitration Clause,' being inserted, our tender, with others, was not given in, the said clause not being in accordance with the rules of the builders' society."

"*Railway Breaks.*"—We are not in a position to investigate the rival claims of those gentlemen who have written to us on this subject.

"*H. C.*" (Broad-street), shall hear.

"*R. Y.*"—We have not time to look for the dates required.

"*J. C. P.*" next week.

Received.—"A Mason," "C. C.," "A Mason" (we have not time); "W. R." "E. H." "A Reader," "W. C. T." "G. H." "J. T. W." "A Subscriber."

Books Received.—"Descriptive and Historical Catalogue of the Pictures in the National Gallery." By Ralph N. Wornum: by authority; 1847.

"*Books, Prices, and Addresses.*"—We have not time to point out books or find addresses.

ADVERTISEMENTS.

COMPETITION DRAWINGS.—TO ARCHITECTS, &c.

MR. THOMAS S. BOYS, Member of the New Society of Painters in Water Colours, and author of "The Picturesque Architecture of Paris, Ghent, Rouen, &c." and of "London as it is," offers his services in Tinting Backgrounds, Landscapes, Perspective Views, Interiors, &c. From the long experience he has had in such subjects, he is fully aware of the points essentially necessary to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 61, Great Titchfield-street, Oxford-street

DRUCE'S, No. 2 WHARF, late Paradise-wharf, Chelsea.

TO THE TRADE.—Parties desirous of delivering Timber Deals, Stone, Bricks, or any other goods, in the districts of Chelsea, Brompton, Fulham, Kensington, &c. &c., will find great facilities of Wharfage, Cranage, or Delivery, by applying as above. A weigh-bridge and drawdock.—N.B. Depôt for Glass Pantiles.

TO BUILDERS, PAINTERS, AND OTHERS.

MESSRS. WOOD and Co., GRAINERS and WRITERS to the Trade only.
70, York Road, Lambeth; and at 28, Cross Street, Blackfriar's Road.

TRACING (F.G.) PAPER.

IMPROVED TRANSPARENT TRACING PAPER, well known for its Superior Transparency and every quality requisite for the use of Architects, Engineers, Engravers, and all Artists, being quite equal to the French, and much cheaper. May be had, Wholesale and Retail of T. HORNE, 2, Thanet-place, Strand, near Temple Bar, Engraver of Stone and Metal Seals.
N.B. Country and Foreign orders must be paid previously.

DR. ARNOTT'S CHIMNEY VENTILATOR.—F. EDWARDS, Stove Maker to her Majesty, 20, Poland-street, Oxford-street, begs to call the attention of Architects, Builders, Gas-fitters, and the Public to the truly invaluable advantages to be derived from the use of Dr. Arnott's Valve for the Ventilation of rooms of every description.—Prices from 7s. 6d. to 20s. each. A prospectus, containing full particulars, to be had on application.

SMOKY CHIMNEYS—NO CURE, NO PAY.

Twenty-five years' extensive experience in all the branches of a stove manufacturing business, and the cure of smoky chimneys of every description, fully justifies F. E. in stating that he can undertake the cure of smoky chimneys on the equitable terms of no cure no pay.

THE most perfect DRY GAS METER in the World.—N. DEFRIES, Dry Gas Meter-maker, in directing the attention of the Public and the Gas Companies to his having just erected an extensive Factory, 10, Hampstead-road, in conjunction with his old-established premises, 67, St. Martin's-lane, begs to say that he can now MEET any DEMAND for METERS, from 2 lights to 1,000. The sale of 18,000 meters and the rapidly increasing demand, stamp as complete a meter that eight years' experience has proved to be unaffected by weather, by time, or by injurious gas. He invites attention to the fact of many of his large meters being in successful action at the Houses of Parliament, the Royal Dockyards, the Thames Tunnel, Theatres, Churches, Club-houses, &c., and has powerful and flattering testimonials at either factory, which may be obtained on application.

LESLIE'S PATENTS.—GAS CONSUMERS guaranteed the following important sanatory and economic advantages:—

1. His BURNERS are purposely MADE TO DETECT FOUL GAS, so injurious to health, so destructive of property, and so expensive to the consumer; the expense and danger increasing with the impurity.

2. His new Patent GLASS COMBUSTION CHAMBERS are made in sizes for the MORE PERFECT PRODUCTION OF LIGHT, from either three, four, or five cubic feet of gas per hour, according to the requirement of light by the consumer, all of which are applicable to one and the same burner of twenty-eight tubes.

3. These philosophical arrangements produce an IMMENSE INCREASE OF LIGHT, from any equal quantity of Gas, over every burner yet offered to the public; and over the Fish-tails and Bat-wings the increase of Light is above 100 per cent.

4. His new Patent AUTOMATON GAS ECONOMISER effectually PREVENTS the WASTE, NUISANCE, and EXPENSE arising from sudden variations in supply from the gas mains, and renders the Burners Light-producers, and not Smoke-producers: these will vary in price according to the duty they have to perform, from 10s. upwards.

PRICES:—Upright Burners, with Conyngham Spring Glass Holders, with either fined glass, Combustion Chamber included, 7s. each; Side Burners, ditto, 6s. each; extra Glass Combustion Chambers, 9d. each. SAMPLE PACKAGES, with one burner and a set of the glass combustion chambers, will be forwarded on receipt of a post-office order, payable to JOHN LESLIE, at the Charing Cross office, for 9s. if a side burner, or 10s. if the upright be desired.

LESLIE'S PATENT FOR ECONOMY OF FUEL AND VENTILATION.

Coal Consumers, with all the advantages of an open, cheerful fire, are guaranteed a saving of 50 per cent., with a beautiful system of ventilation always in operation. Licenses will be granted by the Patentee, One Guinea each Stove, with full instructions to Builders and others to erect. The construction is entirely of brick and iron, and so economical of space and materials, that the whole expense will not exceed the present unphilosophical chimneys and fire-places.
Offices and Manufactory, 59, Conduit-street, London.

PAVING, 2s. 9d. PER SQUARE YARD.
Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 18, WHARF-ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

SAMUEL CUNDY, Mason and Builder, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Pimlico, begs to remind Gentlemen, Architects, and Others, that the Business now carried on at the above Works, is solely his.
That ARCHITECTURAL, SCULPTURIC, GOTHIC, and MASONS' WORK in all its Branches, &c., are executed at the cheapest possible charges.
S. C. respectfully solicits a continuance of the kind favours of all those who have hitherto done business with him, and invites others, in Town and Country, to favour him with their patronage, as his system of doing business would be found highly advantageous.

CAEN SUFFERANCE WHARF, ROTHERHITHE.

LUARD and BEEDHAM beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemange. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-square, Borough, London.
Orders shipped direct from Caen to any port.
The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

ANSTON QUARRIES.—Messrs. Wm. WRIGHT and Co. beg to inform Architects, Engineers, Builders, Stone Merchants, and others, that they have opened QUARRIES in the land adjoining those of Messrs. Grissell and Peto, and are ready to supply any quantity of stone on the shortest notice.
This VALUABLE STONE, so celebrated for its durability, colour, and texture, is well known, having been selected (in preference to all other in England, by the Commissioners of Woods and Forests) for building the New Houses of Parliament. Facilities are at hand for forwarding the Stone to any part of the kingdom.
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WELSH SLATE SLABS of the Finest Description, and planed both faces, supplied to the Trade at the same prices that rough (self-faced) Slabs are being sold at the principal Slate Wharfs in town. A large discount is also allowed, or, in lieu of discount, parties ordering 150 feet and upwards may, if they prefer it, have the Slabs delivered, carriage free, to any canal or railway point within fifty miles of London.
N.B. Whole cargoes direct from the Quarries. Enamelled Slate Chimney-pieces, Slabs, Mural Tablets, Baths, Fonts, &c. &c.
Address, Mr. MAGNUS, Pimlico Slate Works, Upper Belgrave-place.

TO ARCHITECTS, BUILDERS, AND OTHERS.

ENCAUSTIC, VENETIAN, BATH, and other PATENT TILES, and MOSAIC PAVEMENTS, may be obtained in great variety at MINTON and Co.'s Warehouse, 9, Albion-place, Surrey side of Blackfriars-bridge; and at their Manufactory, Stoke-upon-Trent, Staffordshire.—N.B. Slabs and Tiles for Fireplaces, plain and ornamental; Door Furniture, &c.

WORCESTER ENCAUSTIC TILES.—Specimens of these Tiles in great variety, both glazed and unglazed, may be seen, and every information obtained at the London Agents, Messrs. GREIVE and GRELLIER, Marble Wharf, Belvidere-road, near Waterloo-bridge, and Mr. SAMUEL CUNDY, Belgrave Wharf, Pimlico.
N.B. The price has been very much reduced since March last. Orders executed as above, or at the works of Messrs. F. ST. JOHN G. BARR and Co., Palace-row, Worcester.

TO BRICK AND TILE MAKERS.

THE AINSLIE BRICK AND TILE MACHINE COMPANY (James Smith, Esq., of Deanston, chairman), invite attention to their IMPROVED BRICK and TILE MACHINES, which are to be seen at work at Alperton, and at the Company's office, 126 A. Piccadilly, from 10 A.M. to 5 P.M. Mr. Robert Scrivener, who has been appointed manager in the room of Mr. John Ainslie, will shew the Machines at the works at Alperton, which is within a mile of the Sudbury-station of the London and North Western Railway, and two miles of the Ealing-station of the Great Western Railway; also at the Polytechnic Institution, Regent-street, London.—All communications to be addressed to Mr. WILLIAM GORDON, Secretary, at the office of the Company, London, 126 A, Piccadilly, March 1, 1847.
These Machines may also be seen at Mr. SLIGHT'S, Leithwalk, Edinburgh; Mr. LAWRENCE HILL, 125, Buchanan-street, Glasgow; Mr. ROBERT CHARLES, Mill-hill, Leeds; Messrs. PENNY and FINCH, Penkridge, Staffordshire; and Messrs. DRUMMOND and SON, Dublin.

WARMING by means of the circulation of WARM AIR.—BURBIDGE and HEALY beg respectfully to inform the public, that they are prepared to undertake the warming of churches, hot houses, &c. with a new apparatus of the most simple and durable construction, which they can warrant to keep in order any length of time, and which is capable of effectually warming buildings of any magnitude in a most economical manner. BURBIDGE and HEALY, 120, Fleet-street.

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JOHN GRICE most respectfully solicits the attention of Architects, Builders, and Carpenters, to his Stock of Black and Bright Stoves, Kitchen Ranges, &c., &c.
Black Registers, from 6d. per in. and upwards.
Bright ditto with Black and Bright Bars, 2l. 10s. and upwards.
Self-acting Kitchen Ranges, with Oven and Back Boiler, Wrought Bars, Fittings Bright:—

3 ft.	3ft. 6 in.	4 ft.
2l. 2s.	2l. 14s.	4l. 5s.

All articles made on the premises and warranted, and delivered free of expense within five miles of London. Bell-hanging in superior style, hung in secret, 9s. per pull.

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R. HENLY and Co., WHOLESALE IRONMONGERS, and Manufacturers of KITCHEN-RANGES, STOVES, &c., 196, Blackfriars-road, and 117, Union-street, Borough.
Strong Self-acting Kitchen Ranges, with Back Boiler and Oven, and Wrought Bars:—

3 ft.	3 ft. 3 in.	3 ft. 6 in.	3 ft. 9 in.	4 ft.
£3. 6s.	£3. 13s.	£3. 16s.	£4.	£4. 10s.

Henly's Patent Improved, with back Boiler and Wrought Iron Oven:—

2 ft.	3 ft. 3 in.	3 ft. 6 in.	3 feet 9 in.	4 ft.
£3.	£3. 12s.	£3. 5s.	£3. 10s.	£7.

Best Register Stoves, at 7d., 8d., and 9d. per inch.
Do. Elliptic do., at 2d., 3d., and 4d. do.
Manufacturer of WOLFASTON'S PATENT REGISTER STOVES, a certain cure for SMOKY CHIMNEYS, and effecting a great saving in fuel. To be seen in use daily.
Orders from the Country, accompanied with a remittance or reference, will meet with prompt attention.

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Best Patent Cut Clasp.

3d.	4d.	6d.	9d.	10d.	20d.
6d.	7d.	8d.	1s.	1s. 6d.	2s. per 1,000.

Best Sheet Floor Brads 12s. per cwt.
Best Town Glue 40s. per cwt. Do. Scotch, 32s. per cwt.

Best Patent Sash Line.

1	2	3	4	5	6
4s. 3d.	5s.	6s. 6d.	7s. 6d.	10s.	12s. per gross.

Elliptic Stoves, 2d. per inch. Registers, 6d., 7d., 8d., per inch.
Self-acting Kitchen Ranges, with Oven and Back Boiler.
Wrought Bars and Bright Fittings.

3 ft., £3. 3s.	3 ft. 6 in., £3. 12s. 6d.	4 ft., £4.

Lists of Prices had on application at the Warehouse; if by letter pre-paid, inclosing postage stamp.

IRON-WORK FOR BAKERS' OVENS.

F. A. TIDDEMAN, Purfleet Wharf, Earl Street, Blackfriars, keeps an assortment of Stocks, or mouth-pieces; Plates, Furnace-bars, Top and Fall Pieces, Stoppers, Chimney-bars, Inside, Outside, and Ash-pit, Doors and Frames, Boilers, and Frames, Lamps, &c., &c.; all of the best description, at very moderate prices.—CAST-IRON UPSETS.

TO ARCHITECTS, BUILDERS, AND GENTLEMEN FITTING UP THEIR OWN HOUSES.

PRETYMAN and HOBSON, Furnishing Ironmongers, 17, Cornhill, being about to RELINQUISH the STOVE TRADE, have on hand a variety of the most Modern Drawing and Dining Room Stoves, which they will sell at Prices well worthy the attention of every Purchaser.

IMPORTANT to the PUBLIC.—Great Security of E. TANN and SONS PATENT RELIANCE CHEMICAL COMPOUND FILLED FIRE-PROOF IRON SAFE.—Stood the Test on Monday night, October the 11th, at J. Whitaker's and Co., Furniture Warehouse, 28, Water-lane, Earl-street, Blackfriars, the premises being destroyed by fire. J. W.'s books, memorandums, &c., where deposited in one of the Patent Reliance Safes; the contents on the following day where taken out all preserved and perfect; the Reliance Safe may be viewed at the ruins, and documents seen. E. TANN and SONS are the oldest trade manufactures, established upwards of fifty years in making Iron Safes, Doors, &c., of every description. Patent Reliance Lock and Safe Manufactory, 1, Hope-street, Hackney-road.

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BAKER'S OVEN WORK, Forge Backs and Troughs, Rain Water Pipes and Gutters, Sash Weights, Furnace Bars, Stoves, Ranges, &c., always in stock.

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BEGS to inform his Customers, that the PARTNERSHIP between him and WM. HENDRY is DISSOLVED, and that the whole of the business is now solely his; and in consequence of which, he has been enabled to make such arrangements and improvements that they will be insured every advantage in quality, price, and punctuality. The stock of patterns has been re-arranged, to give every facility for selection. A stock of Rain-water Pipes, Heads, Shoes, &c.

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SMITH and ENGLISH, Princes-street, Leicester-square, London, beg to inform Architects, Builders and others, that the above form of Lightning Conductor has been most extensively adopted, and is giving the greatest satisfaction, it proving considerably cheaper first cost, much simpler of application, with less injury to the building, than any other kind, and they can refer with great satisfaction to eminent architects and others, who have adopted it in preference;
as also their much improved Revolving and Panelled Iron Shutters,
PATENT DOUBLE ACTION DOOR SPRINGS,
PATENT CASEMENT FASTENINGS AND SILL BARS,
Patent Copper and Iron Wire Sash Lines,
IMPROVED FLOORING CRAMPS, &c. &c.,
which they continue to manufacture extensively, adopting every improvement which experience and practical application can suggest.

PORTER'S CORRUGATED and PATENT GALVANIZED IRON ROOFING WORKS, Southwark-bridge (and the Grove), Southwark. At the above Works, the Public are secure in having the superior make, and by the Patent process of Galvanizing Iron as first introduced into this Country, with many improvements in its application to Roofs, Buildings, &c. Every description of Building, Railway, and other Iron and Smith's work Manufactured of the best quality. Iron and Fence Hurdles as usual.—The Trade Supplied.

COLLINGE'S PATENT HINGES.—Sole manufactory, 64, Bridge-road, Lambeth, where a great variety are always on view, for church, park, railroad, coach-house, and all other doors and gates, of large or small dimensions, a gate of a ton in weight moving with these engines as easily as a wicket; they are also admirably adapted for drawing-rooms, being highly ornamental, and folding doors fitted with them may be removed and replaced in an instant. Rising and spring hinges, with very superior fastenings, for exterior gates, at moderate prices. To be seen at CHAS. COLLINGE and Co.'s Patent Axletree, Sugar-Mill, and Spherical Hinge Manufactory, 64, Bridge-road, Lambeth. A liberal discount to the trade.

By Her Majesty's Royal Letters Patent.

BAILLIE'S PATENT ROUNDED RIM LOCKS,
WITH SECRET AND SECURE FIXINGS.

THIS CHEAP and USEFUL ARTICLE, obviating the unsightly appearance and insecurity of the common rim lock, can be obtained from the Manufacturers, Messrs. CARPENTER and TILDESLEY, Willenhall; or from the sole Agent, Mr. JOHN FAULKNER, Ironmonger, 63, St. Martin's-le-Grand, London, opposite the new Money Order Office.

PATENT BELLS.—Messrs. MEARS beg to call the attention of the trade and the public generally to these articles, which they are now prepared to supply in any quantity and variety. The composition is of a new metal, called the Union Metal, and the bells are of very beautiful tone and cheaper than those made of the ordinary bell-metal.—Orders received at the Bell Foundry, Whitechapel, for House, Cattle, Clock, and other Bells.

PATENT METALS for Bearings.—Engineers and all Manufacturers in Brass, &c., &c., are respectfully invited to test the quality of these new alloys, which have already received the sanction of eminent engineers and parties connected with public works. One sort for bearings and engineering purposes generally, will be found superior in quality and cheaper, than the metals now in use. Other sorts will be found of a better colour, a more brilliant surface and bearing a higher polish than any ordinary brass.—Messrs. MEARS will be happy to send any quantity as samples, or to make any castings from patterns sent to them.

TO ARCHITECTS, BUILDERS, AND BRICK-MAKERS.

PUMPS of Superior CONSTRUCTION, bored perfectly true by improved machinery, in various plain and ornamental patterns for Conservatories, Squares, Market Places, Roads, Gardens, and for Liquid Manure. BRICK-MAKERS' PUMPS, in Wrought and Cast Iron, HYDRAULIC LIFT PUMPS, and ENGINES for Wells of any depth. SINGLE and DOUBLE PUMPS up to twelve-inch bore, kept for Hire.
BENJ. FOWLER, 63, Dorset-street, Fleet-street.

FLEXIBLE PIPES AND TUBING, FOR PUMPS, ENGINES, GAS, &c.

PATENT VULCANIZED INDIA-RUBBER HOSE-PIPE and TUBING of every description. These Pipes are made to stand hot liquor and gas without injury; and as they do not become stiff in the coldest temperatures, or require any application when out of use, are particularly well adapted for Fire-Engines. Vulcanized India-rubber Washers for steam and hot-water joints, &c., of all sizes.—Sole Manufacturer, JAS. LYNE HANCOCK, Goswell-mews, Goswell-road, London.

PEAKE'S TERRO-METALLIC, DRAIN, AND CONDUIT PIPES;

ROOFING, RIDGING, PAVING, AND OTHER TILES;

BUILDING, PAVING, AND MANY-FORMED BRICKS, &c.

Of at least One Hundred Sorts and Sizes.

THOMAS PEAKE,

4 WHARF, MACCLESFIELD-STREET SOUTH, CITY-ROAD BASIN, LONDON,

A CENTRAL SITUATION,

AND THE TILERIES, TUNSTALL, STAFFORDSHIRE POTTERIES,

Begs to remark that his Establishment was founded upwards of a century since, and for forty years has been carried on by his late Father and Himself. That during the last thirty years he has introduced his Manufactures into the metropolis of the Cotton Department of British enterprize Manchester, and other parts of the Country, with complete success, where they continue to be duly appreciated. That the cost of transit has been of late so reduced, as to enable him to keep a respectable assortment in London, where he used to supply Messrs. Wyatt, Parker, and Co., as agents, but now superintends the Depôt personally, and from what he has observed in Town as well as in other places, he cannot doubt but that his Terro-Metallic goods will be as generally adopted as they shall become known. That he is sincerely grateful to his numerous customers for their favours during so long a period, and respectfully assures them, as well as the Public generally, that they may rely upon the advantages derived from his extensive experience for a third of a century being continually exerted to merit their future confidence and support. No MATERIAL, he submits, can be more desirable than his Terro-Metallic to mould into an almost infinite variety of articles, required either at home or abroad, by the Nobility, Clergy, Gentry, Civil Engineers, Architects, and Builders;—also by the Owners and Occupiers generally of Land, Mines, Buildings, Gardens, and other Property. The late Mr. Loudon, the late Mr. Telford, C.E., and the Incorporated Church Building Society (amongst other persons and institutions), have borne very important testimony to the excellence of this material. Its colour, cleanliness, strength, efficiency, durability, and easy adaptation, are great desiderata, and the surveyor to the honourable Court of Sewers for Westminster, in 1846, wrote,—"I consider they" (viz., the Terro-metallic Pipes) "are admirably adapted, from their material and Strength, as well as from their Straightness and Smoothness, for house and other drains." Surely STRENGTH, STRAIGHTNESS, and SMOOTHNESS, are not ordinary characteristics! The Terro-Metallic has NECESSARILY a Firm Body, intense heat being indispensable to fuse its surfaces, forming thereby a natural and estimable glaze; this glaze, however, being natural, will expand or contract with the body, and consequently the articles will remain uninjured; but this is not always the case when bodies are covered with artificial glazes. The variety of ordinary and unsolid earths, of which bodies are formed, to receive upon their surfaces glassiness by means of foreign agents,—such as salt smear or wash,—will not stand the great degree of heat needful to bring the Terro-Metallic to its admirable compactness, solidity, and strength; and many clays would be thereby reduced from a large article or vessel into a bit of shapeless scoria. Experiments have demonstrated this to be a fact, and they could be easily repeated. Indeed, persons in the habit of using brown glazed bottles, milk-pans, steens, pots or mugs, need not be informed of the DIFFERENCE of bodily texture prevalent in such articles, and inseparable from UNCERTAINTY as to their durability; an uncertainty which increases by competition, but is by no means so important in household vessels, as in articles designed for permanent work beneath our streets and buildings. It is submitted, therefore, that Terro-Metallic Pipes are, for obvious reasons, a desideratum for purposes such as drains or conduits, not only on account of acids being innocuous, even to the body, or that the pipes may be laid near the surface of any street or road without risk of injury by heavily laden carriages passing over them,—but also because they may be laid in newly-formed ground without danger of fracture or breaking line by subsidence. The sockets of these pipes are roomy and deep, with well-formed shoulders, which are of a piece with them, not stuck to them after they are made. It is also further submitted that the Terro-Metallic cannot fail to take preference against every other material of inferior firmness, solidity, and strength of bodily texture, in proportion as the Public shall severally have an opportunity to judge for itself by examining and comparing it in every point of view with all competing materials, and deciding according to their intrinsic merits respectively.

The colours of the PLAIN TILES for roofs are either Blue, Brindled, or Red. They are neither nailed nor pegged, but are hung upon sawn laths, 1 inch by 3-8ths of an inch, by knobs, which take firmer hold, as the wind lifts the lower end of the Tiles. Hence, and considering the fold of 7 inches, the security of such covering in exposed situations and stormy weather. RIDGES, HIPS, AND VALLIES are neatly tiled, superseding the use of Lead, which is liable to be either stolen or perforated by worms. Plain Tiles, of some antiquity and comparatively rude manufacture, in the Midland Counties, are still efficient upon roofs where they have lain undisturbed for 150 years; and a mansion called Turnhurst, the last residence of the celebrated civil engineer, Brindley, is a remarkable instance. Sudbury Hall, lately occupied by her Majesty the Queen Dowager, the seats of Earl Talbot and Lord Hatherton, also churches and other valuable buildings, are covered with Plain Tiles 11 inches by 7 inches by 7-16ths of an inch, of which 1,000 lay 300 square feet, at 8-inch gauge, and weigh from 20 to 25 cwt. Bricklayers usually do both tiling and pointing. The Incorporated Church Building Society prefer these Tiles to all other materials, excepting Lead and Copper. The Dukes of Devonshire and Sutherland are in the habit of using Terro-Metallic articles, and possess in the neighbourhoods of Chatsworth and Trentham, of Mr. Peake's manufacture, probably the best as well as most varied specimens of tiled roofs in the world. Travellers, who immediately after hurricanes have traversed districts where Thatch and all kinds of Slates have been used, as well as these Tiles, have no doubt observed the damage sustained by roofs of other materials, whilst Terro-Metallic Tiled Roofs were uninjured. Consequently, the latter are preferred in the bleak moorlands of Staffordshire, Derbyshire, &c. In regard to the strength of timber required for Plain Tiles, it may be acceptable to describe one of two similar roofs, which stand perfectly, although affected by very different degrees of heat and cold from the manufacturing operations carrying on under them. The building is 210 feet long and 18 feet wide, without partition. No stronger timber is used than red deals, 11 inches by 3 inches. The principals are 10½ feet apart; there are two side trees on each side, 5½ inches by 3 inches; the spars are 3 inches by 2½ inches, and 18 inches apart. The laths are sawn 1 in. by 3-8ths of an inch. The pitch is between a third and a square. These Tiles keep the interior of buildings comparatively warm in winter and cool in summer, and thereby preserve the timber of the roof. Their appearance in perspective upon buildings erected in the Early English style is approved; the effect is varied also by the drips, or lower ends of the tiles, being moulded to numerous devices, "shewing off some of the most pleasing alternations of straight and waved lines." The PAN TILES are both of the usual form, and of a new pattern, which (at light cost) give a marked character to the roofs of such edifices as they suit, the curves, both concave and convex, being much larger and bolder than has been the case usually. GRECIAN AND ITALIAN TILES are furnished, with weather stop or rib and groove in the lap, forming a beautiful and almost everlasting covering. Of the different kinds it has been said, "In short, we consider them as the best of all coverings for roofs, whether of small or large buildings." RIDGE AND HIP TILES are plain, capped, rolled tops, also grooved to receive various patterns of vertical ornaments; the saddles are moulded to suit the angle formed by the roof; they are made in one piece, and not fastened at the angle with bits of iron, like slate ridges, to come apart as soon as the clips shall rust away: the pitch should be stated in the order. The rolls are hollow, admitting a circular rod of any length to be passed through them. VALLEY TILES are equally efficient and more economical and durable than Lead, Zinc, &c. PAVING TILES consist of Squares, Blue and Red, of several sizes, of octagon and small squares of different colours; of hexagons, of diamonds, and neatly-worked thin floor-bricks, for intersection with each other, to form a variety of pleasing pavements. To lay these Tiles, make the ground solid, and spread a little sand or fine furnace ashes over it; place the Tiles upon mortar, or other material, thinly spread, but keep the joints free, and fill them afterwards with sharp sand, which should be spread over the Tiles, and swept to and fro for a few days with a besom. Lay boards upon the Tiles to walk upon until the mortar, or other material in which they shall be laid, is set firmly. Square Tiles, 9 inches by 9 inches, and 1¼ to 1½ inches thick, are extensively used in the floors of Fireproof Warehouses at the ports of Liverpool, Hull, and Preston; also for all the floors of Fireproof Cotton Mills and other large buildings. Comparatively speaking, these tiled floors yield neither sand nor dust; the bearings and axles of machinery, therefore, as well as the cotton, silk, woollen, or other fabric being wrought by it, suffer less injury by these floors than any other. Smaller squares, and other forms of Tiles, are used to pave Aisles in Churches, Entrance-halls, Household Rooms in Farmeries, and other respectable Dwellings, Cottages, Kitchens, Cellars, Schools, &c. They are easily cleaned, even from grease.

BRICKS, to any reasonable dimensions, are supplied; those 9 inch by 4½ inch by 2 7-8ths, are in great request for Tunnels, Bridges, Canal-locks, Breast-walls, and various works upon Railways, Canals, &c. In distant localities, where the carriage is expensive, these Bricks are restricted to a facing of brick-breadth. Also, FIRE BRICKS, FRONT BRICKS, CLINKER BRICKS, WARE-HOUSE, and BARN-FLOOR BRICKS, and PAVING BRICKS for Courts, Areas, Cottages, Foot-paths, and Channels; NOSED BRICKS, i. e. one corner rounded; SEMI-CIRCULAR BRICKS, to erect Columns or Cope-walls; Bricks champhered to the angle of an OCTAGON; Bricks champhered to angles of Gables, and useful to draw a covering over horizontal Flues; Bricks for PLINTHS to Patterns; KEY-STONE or WEDGE-LIKE (longitudinally or transversely) BRICKS for Arches, Culverts, or Curves; other forms would be made to Patterns or Sketches.

SOCKET PIPES for DRAINS, CONDUITS, FLUES, &c. may be had of different diameters, from 2 inches to 18 inches, increasing in thickness in proportion as the diameter is extended, and in lengths not exceeding 27 inches net; these Sockets are deep, neatly formed in the substance of the Pipe, and not stuck to it afterwards. The joints are made tight with a little Roman cement or good mortar. If desired, any form or size of Pipe would be perforated with holes, widening from the exterior to the interior surfaces. Being of true circular form and neat workmanship, smooth inside, which is well covered by a natural, efficient, and durable glaze, they resist the commonly injurious effects of atmosphere, and of mineral or other fluids or acids. These Pipes are very desirable, as they are in extensive and increasing demand, for small Sewers, Drains, Conduits, Flues, &c., instead of Brickwork, which must be erected of a bore fifty per cent. larger than the Pipes in diameter to equal them in efficiency. Also, CONICAL, REBATED, and PLAIN PIPES, of various diameters and lengths. The different forms of Pipes when divided longitudinally into halves, before they are fired, make superior surface Channels, especially adapted to convey water down the slopes of railway and other works. The Pipes, Bricks, and other articles have been, and continue to be in extensive use in the construction and draining of railway and other important works, a proof of the estimation in which they are held by the Engineers.

THE SKIRTING TILES protect the Plaster on the Walls, and make a neat and durable finish. Vermin cannot harbour about them, and Oil-paint of any colour they will take and retain for a long time. GARDEN-WALK EDGING, either with a bead along the top or an OG, has a neat appearance, and holds up the soil, but does not shelter insects; it is the best and cheapest material for the purpose on account of its durability. DRAIN GRATES are intended to prevent Leaves, Straws, Sticks, and other things from choking Drains; they are suited to gravelled-walks in Parks, Pleasure-grounds, Gardens, Cemeteries, as well as Streets, Scullories, Courts, Areas, and all other places where water enters Drains. CHANNEL BRICKS supplied of different lengths, breadths, and patterns, to lay in any place paved with flag or other material where water is to be carried off. WALL-COPING, of several patterns and dimensions, calculated to preserve walls, and especially those built of bricks of questionable durability; one of the patterns, with Bridge Tiles over the joints, is uniform with the Grecian Tiles for Roofs. CHIMNEY-TOPS are manufactured to suit Customers, a few patterns are always ready for sale. Many smoky chimneys, which had not been benefitted by any other means, have been cured by a roomy Pipe three feet long, pierced all over with holes, 1½ inch diameter.

PUGGING TILES are of various patterns, to place in partitions; also, under chamber floors to prevent the noise of one room from being an annoyance in others. KILN-FLOOR TILES are of two sizes, viz., 9 inches and 12 inches square, and well pierced; they are used to pave Kilns for drying and seasoning, Malt, Grain, &c., as well as Wool and other materials used by manufacturers and others. FLUE COVERS are either oblong or square, about 2 inches thick, and of different sizes; they are used to lay over horizontal Flues, extending from centre to centre of the mid-feathers or partition-walls. DRAINING SHELLS, whose form is well known to be like a horse-shoe, if one looks at the end or transverse section of the Tile, are of three sizes, viz., 3½ inches, 3¾ inches, and 4½ inches across the feet or bottom. Of Terro-Metallic the shells are very durable, and are usually placed in the drains upon damaged Roof-tiles of the same material.

CHIMNEY AND OTHER FUNNEL LININGS, instead of parget, are a desideratum in consequence, 1st, of its being illegal as well as inhuman to employ climbing-boys; 2nd, of smoky chimneys and down-draughts, owing to defects in the joints of the brickwork between the flues, and the parget having perished; and, 3rd, of many and disastrous fires attributable to the latter defects. These linings are made of a peculiar mixture of materials to bear heat and cold; they are of different dimensions and forms of area, and are unquestionably deserving of attention from all who are erecting or altering chimneys; they have been extensively used in some parts of the kingdom for many years past, and with entire satisfaction.

HOW TO CUT OR FIT TERRO-METALLIC WARE: rule upon the edges and surfaces of the article the line of division proposed, then with the cutting-end of a brick-hammer, or other instrument made as sharp as possible, chip along said lines to the depth of one-sixteenth or one-eighth of an inch, without omitting any part, and always deepest at the arrises. This done, the article will divide under a few slight taps with the edge of a trowel, or other similar tool in weight proportioned to the size and thickness of the article. TO PRESERVE THE COLOUR of the articles, care should be taken not to expose them to lime or other similar dust,—or to mortar, the stains from which cannot be removed. Ridging or Hip Tiles should be pointed early on a fine day, and in mortar almost black with smith's refuse or furnace sand.

THE TILERIES ARE SITUATED near the centre of the Kingdom, about Three Furlongs from the Main Line of the North Staffordshire Railway, with which it is to be connected as soon as finished by a private branch, and along the margin of the Grand Trunk Canal from the Trent to the Mersey, rendering transit both expeditious and cheap to the port of Liverpool, and moderate to all other parts of the empire. FOR EXPORTATION TO THE BRITISH COLONIES, and Foreign Countries generally, MERCHANTS in Liverpool and Glasgow especially, will find these goods susceptible of extended and lucrative commerce. THE MANUFACTURER IS NOT IN THE CARRYING TRADE, and therefore cannot undertake carriage of his goods, excepting to deliver them alongside of carriages, boats, or railway trucks at his own wharfs or branch railway, at which time he expects them to be signed for "in good condition," and responsibility to end as far as he is concerned. POSSIBLE VARIATION IN SIZE OF ARTICLES—PIPES, as well as other things contained in the lists, may vary more or less from the stated dimensions and weights; they are, however, as accurate as circumstances permit, and sufficiently so, it is hoped, for general information. PURCHASERS NOT TO PICK THE ARTICLES, which are sorted "ACCORDING TO THE CUSTOMS OF THE BRICK AND TILE TRADE," as soon as drawn out of the ovens, and having been placed upon the works or other premises in the usual manner, they are not to be picked, but taken all together as far as the number required; still, purchasers may select any of the lots to be supplied from, provided they do not reject any of the articles. NEWLY-DESIGNED ARTICLES, AND ALTERATIONS SUBJECT TO EXTRA CHARGES for new moulds or altering others, and for extra labour in piercing, nicking, dividing, or altering any article from the established form or size. NUMBER IN COUNT is ten times ten in a hundred, ten of which make a thousand. TERMS RESPECTING CREDIT, SPECIAL CONTRACTS, AND PAYMENT, must be regulated principally by the nature of the disbursements in the trade, and partly by such special bargains as the manufacturer may enter into; Excise, Wages, and other out-goings, are prompt and without abatement, consequently special bargains are to be strictly fulfilled by purchasers in all points of view, payment to be made punctually and without abatement, according to such special agreement, and generally in all other cases the prices as per lists respectively, as well as charges for new or altered goods, are to be paid for on or before delivery in cash, without discount, premium, or abatement, or the respective items to be subject to interest at the rate of 5*l.* per cent. per annum, until paid. REFERENCE INDISPENSABLE in special bargains, or any other instance where goods are to be delivered before they shall be paid for. LETTERS MAY BE ADDRESSED to either No. 4 Wharf, Macclesfield-street South, City-road Basin, London; or to The Tileries, Tunstall, Staffordshire Potteries.

UNSOLICITED TESTIMONIALS, NOTICES, &c.

"I consider they," the Terro-Metallic Drain Pipes, "are admirably adapted, from their material and Strength, as well as from their Straightness and Smoothness, for house and other drains."—*Extract from a letter by John Phillips, Esq., Surveyor to the Honourable Commissioners of Sewers for Westminster and part of Middlesex*, 1846.

"I beg to call the attention of the Court to the necessity of its taking steps to procure immediately a further supply of Straight and Curved Lengths of Terro-Metallic Drain Pipes, of 9 inches diameter, with Socket Joints, as those now in store will soon be worked up. It is also desirable to procure some with Bevelled Ends to suit the sides of the Sewers * * * and others of a funnel shape, similar to the model presented herewith, for the Gullies and Gully Drains. Fig. 2 shews the mode, by means of pipes, of connecting private drains with new sewers; and as it is essential, both as regards economy and sound construction, that they should be worked in the side walls whilst sewers are being constructed, I propose that a large quantity of them should also be procured. * * I also propose that in lieu of using bricks, as at present, for connecting private drains with the sewers already constructed, the connections be formed, after Midsummer day next, by means of Terro-Metallic Pipes."—*Extract from a Report by the above-named Gentleman, dated 1st May*, 1846.

"The Bricks, being made of clay peculiarly good in quality and triturated by machinery." (The peculiar machinery for this process was erected by Mr. Telford, but was removed at the completion of his work. The advertiser has not seen such machinery either before or since), "and, being carefully moulded and burnt, are, in fact, the best Newcastle blue brick, the hardest and most durable of any made in England."—*Life of Telford, page 77.*

"The best external covering is Lead, which should be not less than seven pounds to the foot; or Copper of not less than twenty-two ounces to the foot. Blue Tiles * * * are perhaps the next best covering," i.e., of roofs.—*Suggestions and Instructions from the Incorporated Church Building Society, published in "The Builder" of the 16th of May, 1846, page 233.*

"On the western side of Tunstall, on the long declivity which reaches to the banks of the canal, are the extensive works called THE TILERIES. The clay on this brow has a semi-vitreous quality; it has been partially worked for a century past, but of late years its manufactured products have risen into increased importance, and are forwarded to distant parts of the kingdom; consisting of Tiles, Quarries, Building and Flooring Bricks, Pipes for conveying water, and other similar articles of very superior hardness and durability. At these works steam-engines are used for crushing and preparing the clay."—*History, etc., of the Borough of Stoke-upon-Trent, by John Ward, Esq., page 100. Simpkin, Marshall, and Co., 1843.*

"A mode of Tiling adopted by the ancients, and of which there are specimens still to be found in Rome, is thus described by Borgnis ('Traite de Construction,' p. 233), a description follows, with plans and sections of the 'Italian' Tiles, 2 B and 2 C, p. 956, and sec. 1094;—'the mode of Tiling exhibited in the Temple of Diana Propylea, is given in the engravings of that Temple in the Unedited Antiquities of Attica.' After describing this mode of 'Grecian Tiling, D 2 and E 2, with plans and sections, it is stated that "the effect of these Tiles is remarkably good, and imitations of them might be introduced in Villas and cottages with excellent effect."—P. 956, and sec. 1095.

"Which (viz., Flat or Plain Roof Tiles, with lower ends ornamental) would produce an agreeable shade, shewing off some of the most pleasing alternations of straight and waved lines that this species of material is capable of producing." P. 228, and sec. 408, where the Tiles are figured.

"The Tiles being formed of Terro-Metallic Earth, have somewhat of the colour of Cast-Iron; they are almost equally hard, and must, from their nature, be incomparably more durable. In short, we consider them as the best of all coverings for roofs, whether of small or large buildings. * * * * There are suitable Ridge-Tiles, Hip-Tiles, Valley-Tiles, and many others, all manufactured by Mr. Peake, in the same superior style."—*Page 648, and sec. 1308, Loudon's Encyclopædia of Cottage, Farm, and Villa Architecture. Longman and Co., 1833.*

"Every thing tending to facilitate the sweeping of chimneys by machinery is now peculiarly deserving of public attention. We have been much interested by the sight of a newly-introduced material for lining flues, invented and manufactured by Mr. Thomas Peake, of Tunstall, Staffordshire, whose various important Terro-Metallic improvements are so popularly known through 'Loudon's Encyclopædia.' This species of piping is so exceedingly cheap that it will cause no very material additional expense in the construction of chimneys; it can sustain no injury from the action of fire, and as it presents a perfectly smooth channel for the sweeping machine, so it also requires less frequent cleansing than a common chimney, as it affords no lodgment for soot."—*Sheffield Iris, 14th Dec. 1841.*

LISTS TO CONTAIN NEARLY ALL THE ARTICLES, WITH OTHER DETAILS RESPECTING THEM, ARE TO BE READY FOR DISTRIBUTION IN A SHORT TIME.

Reference to sketches of some of the articles:—They are to a scale of 3-4ths of an inch to a foot, or thereabouts.

No. 1. Plain Roofing Tiles.
No. 2. Ornamental Roofing Tiles of six patterns
AA 2. Pan Tiles.
2 B } Italian Tiles.
2 C }
D 2 } Grecian Tiles.
E 2 }
2 D. Grecian Ridge.
2 E. Grecian Eaves Tile.

3. Plain Gable Tile.
A 3. Italian Ridge.
No. 4. Capped Ridge Tile.
5. Plain Ridge.
C 5 to F F 5. Plain Saddle, grooved for ornaments.
C 5 to F F 5. Rolled Saddle, grooved for ornaments.
B 5. Pyramid Ridge.
C 5. Vandyke Ridge.

D 5. Trefoil Ridge.
E 5. Fleur-de-lis Ridge.
F 5. Fleur-de-lis Ridge.
F F 5. Fleur-de-lis Ridge.
G 5. Inverted Arch Ridge.
6. Capped Ridge.
A 6. Gothic Cap Ridge.
7. Rolled Top Ridge.
10. Quoined Hips.
11. Quoined Vallies.

A 13. } Paving Tiles.
B 13. }
C 13. } Paving Tiles.
D 13 }
15. Paving Tiles.
A 15. Paving Tiles.
No. 16. Paving Tiles.
17. Skirting Tile.
18. Skirting Tile.
19 Skirting Tile

21. Paving Bricks.
30. Channel Brick.
D 30. Channel Tile.
33. Kiln-floor Tile.
40. Wall Coping.
41. Wall Coping.
No. 44. Drain Guard.
46. Garden Edging.
A 46. Garden Edging.
48. Drain Shell.

51. Plain Pipe.
52. Rebated Pipe.
57. Socket Pipe.
61. Conical Pipe.
B 64. Flue Lining.
C 64. Flue Lining.
C 66. Chimney Top.
66. Chimney Top.
67. Chimney Top.

[Entered at Stationers' Hall.]